



The Gallery Francois Conradie, Marcel Haladej, Carlson Woon & more!



Project Overview"Fishman"
by Fabricio Moraes



Cover Image by Jose Alves da Silva

CHARACTER CREATION: FINISHING TOUCHES



CONCLUDING THE STYLIZING A TOON HUMAN TUTORIAL SERIES

ZBrush Monster Character Creation

Marc-Olivier Plouffe brings us the third installment of this ZBrush tutorial series as he creates a superb Subterranean Monster.



Andrew Finch continues on with The Italian Courtyard tutorial series, this month looking at BSP Creation - Draft lighting.



Creating the Celeritas really gets off the ground this issue as Djordjie Jovanovic, Luigi Terza & Tamás Gyermán begin the modeling process.





3dcreative Contents



EDITORIAL

Hello and welcome to the Christmas issue of 3DCreative! As I look out my window I can see a few inches of snow, and can almost feel the cold creeping in! If playing in the snow isn't your thing, then stay inside, get comfy and get stuck into another amazing issue of 3DCreative.

We have got so much great content in this issue that it is hard to know where to start, but we will kick off by talking about this month's interview which is with Jian Xu. Jian is a brilliant artist that has been setting the CG community a blaze with his amazingly realistic sculpts, and his ability to create such accurate skin. This is a great interview that is packed with some of the best CG you would have seen this year!

On the subject of some of the best CG this year, I think that this month's making of image falls into that category to. The amazing Fabricio Moraes shares how he made his excellently original image Fishman with us in this issue. Fabricio covers just about every aspect of the creation process from design through to post production, handing out helpful tips along the way.

I hope a lot of you found the concept chapter of the Creating the Celeritas spaceship tutorial helpful. In this issue the concept gets handed to the team of modellers who will show you how to turn the concept into a completed low poly model. This series will be dealt with by three different artists in three different types of software. In Cinema 4D we have Tamás Gyermán, in Maya we have Luigi Terza and in 3ds max we have Djordjie Jovanovic.

Jose Alves da Silva has done an amazing job for us throughout the entire Stylized Toon Human and Animal series, and in this issue he wraps up his cartoon human by showing us how he did such a great job of the texturing, and by talking us through his post production process. Next month we kick off a new series called Photoshop post Effects for 3D. This is going to be a great onel

I know a lot of you will be gaming fans, and would have therefore loved Andrew Finch's first lesson on the Unreal games engine. I am expecting to see loads of homemade games out there in the coming months as Andy guides you through the process of creating a game level. This month we move on to basic texturing and lighting.



CONTENTS What's in this month?



IIAN XU



The Gallery 10 of the Best 3D Artworks



STYLIZING A TOON HUMAN



Chapter 6: Materials & Lighting



The Italian Cortyard Chapter 2: BSP Creation - Draft lighting





"Fishman" Project Overview by Adam Skutt



'Eldorado"



Creating the Celeritas Chapter 2: Modeling the Low-Poly Version



ABOUT US

3DTotal.com Ltd Information & Contacts

EDITOR

Simon Morse LEAD

DESIGNER

Matt Lewis **MARKETING**

LAYOUT

Layla Khani

Chris Perrins Jo Hargreaves CONTENT Simon Morse

Tom Greenway Richard Tilbury Chris Perrins

PROOFING Jo Hargreaves

FREE STUFF!

Wherever you see this symbol, click it to download resources, extras & even movies!



ZBrush Monsters has been a really great tutorial series so far, so many of the final images have been huge hits in the forums and galleries online, and in this issue we continue the same high standards with Marc-Olivier Plouffe or Splash as he is known in the Forums. Marco shows us how he designed and created his Subterranean Shrimp in great detail and gives us a helping hand with tips and tricks along the way.

The gallery is heaving with great images this month, including work from Carlson Woon, Marcel Haladej, Maarten Verhoeven and many more. I hope you all have a great Christmas and I will see you next year!



SETTING UP YOUR PDF READER

For optimum viewing of the magazine, it is recommended that you have the latest Acrobat Reader installed. You can download it for free, here: DOWNLOAD!

To view the many double-page spreads featured in 3DCreative magazine, you can set the reader to display 'two-up', which will show double-page spreads as one large landscape image:

- 1. Open the magazine in Reader;
- 2. Go to the VIEW menu, then $PAGE\ DISPLAY;$
- 3. Select TWO-UP CONTINUOUS, making sure that SHOW COVER PAGE is also selected.

That's it!

Get the most out of your Magazine!

If you're having problems viewing the double-page spreads that we feature in this magazine, follow this handy little guide on how to set up your PDF reader!







CONTRIBUTING ARTISTS

Every month artists from around the world contribute to 3DCreative, and you can find out a little more about them right here! If you'd like to get involved in 3DCreative magazine, please contact: simon@3dtotal.com



DJORDJIE JOVANOVIC

As the son of a photographer Djordje became involved in visual arts from an early age. After finishing the High



School for Design he graduated the University of Arts in Belgrade in the Computer Art and Design course. Currently he works as a freelance 3D artist specializing in a Hard Surface Environment modeling, texturing and Lighting.

http://djordjejovanovic.com/blog/djordjexyz@gmail.com



LUIGI TERZA

Luigi Terzi works and lives in Torino (Italy). After a 10 year experience as illustrator and 3D artist in advertising

he recently founded a company with other freelance artists called Blackbox .

http://www.lu-ter.com/ gigiterzi@tiscalinet.it



Tamás Gyermán

Tamás Gyermán is a fan of all space and fantasy art. Above all he likes to create spaceships and grand space-scenes. He



always uses powerful colors and contrasting lights in his images.

http://www.wmelone.com/cinemorx/index.html tamas.gyerman@gmail.com

Issue 064 December 2010

JOSE ALVES DA SILVA Jose Alves da Silva

has been working in the 3D field for over 15 years. Jose has a degree in Architecture but now works as

a full time freelancer dedicated to his true passions - character creation and illustration. This has given Jose the opportunity to work on some spectacular projects in the feature film, advertising and gaming industries. http://josealvessilva.daportfolio.com/joalvessilva@netcabo.pt





CONTRIBUTORS



ANDREW FINCH

Aged 28 and living in the great city of Birmingham, in the U.K. He has a degree in 3D Animation which inspired his

passion for environment art. He now works as an environment artist at Codemasters. He says, "Working in the games industry is exciting: you never know what the next project will be and there's always something new to learn. This helps to keep you creative and grow as an artist." afinchy@googlemail.com



MARC-OLIVIER PLOUFFE

Marc-Olivier Plouffe, has been doing 3D art since he joined the Ubisoft Campus in June 2009. After this



one year program, he had the chance to work as a beta-tester for Pixologic's ZBrush, whilst doing some freelancing. He learnt the basics of ZBrush at school and then improved his skills with the help of other artists and tutorials on the net. http://www.marcoplouffe.commarquo@hotmail.com



JIAN

Jian Xu has worked in the CG industry in China for 10 years as a 3D Artist and is very skilled at modeling, texturing, lighting

and rendering and is interested in working on realistic and cartoony movies, games, and advertising. He had been at UBISOFT in Shanghai for 5 years, but is now working in the feature department of Luacsfilm in Singapore.

http://xjgd4321.cgsociety.org/gallery/jian.xu@hotmail.com





FABRICIO MORAES

Fabricio has always loved animation and was stunned when watching films like Toy Story, Antz or huge productions like



Jurassic Park. This is when he realized that CG was his thing. In the middle of 2009 he started to work for Liquid Development as a freelance character artist, and also started giving classes about game art at the CCAA University. http://fabmoraes.cgsociety.org/gallery/fab.moraes@hotmail.com



Would You Like to Contribute to 3DCreative or 2DARTIST MAGAZINE?

We are always looking for tutorial artists, gallery submissions, potential interviewees, 'making of' writers, and more. For more information, please send a link to your portfolio, or send examples, to: simon@3dtotal.com



Bring Your Animation School Home

- Learn face-to-face from animators working at every major animation studio
- Connect, collaborate and grow both personally and professionally
- Develop a network of connections in a thriving global community
- Receive personal and academic coaching, career services support, and inspiration from the entire Animation Mentor crew!

Learn more at www.AnimationMentor.com/inspire

" Enrolling at Animation Mentor was the best decision I ever made. The curriculum is very thorough and the community mentors and students – is awesome. Being surrounded by so many incredibly talented people from all over the world is a total blast and definitely boosts the learning experience! I am thankful for the opportunity to turn my dreams into goals. "

> - Jean-Luc Delhougne **Animation Mentor Graduate**













Interview with Jian Xu

Can you tell us a little about your occupation and background and how you came to be where you are now?

Hi, I am very pleased to be interviewed by 3DCreative. I have worked in the CG industry for ten years as a 3D artist. Now I am working for a film company in Singapore as a modeler, but it is my dream to make a fantasy movie.

I can see the appeal of a fantasy movie with its scope for the imagination, but what particular fantasy genre or type of movie would you most enjoy working on?

It's difficult to say. I would like to try any style, but a realistic movie is more of a challenge compared to, say, a cartoon style, which is also a favourite of mine because it is good to make people laugh. I really enjoy the Pixar films, but I think a good movie has to have a good storyline.

"A realistic style for me is the most challenging, because everybody knows how humans look."

Many of your characters have very realistic skin. How do you go about creating it and what kind of set up do you use in Max?

Thanks. To start I will search for a lot of references online or take photos myself, and observe details which are helpful for creating the texture. I also do many test renders to try to perfect a good quality skin effect.

What type of material set up do you employ and what are the maps you use to build the skin texture?

When I make skin I usually use a mental ray SSS material. I use three maps for the texturing, one for overall Diffuse coloration, one for Bump, and a third one for the overall specular Weight.





There is a mixture of work in your portfolio from realistic through to caricature and cartoon. What do you feel are the most challenging aspects to each of the three styles?

Different styles have different challenges. A realistic style for me is the most challenging, because everybody knows how humans look. Any small inaccuracies are instantly recognized and cause the work to appear unrealistic. I therefore have to know the structure and texture of the subject very well.

"CHARACTERS MUST LOOK AT THE CAMERA TO MAKE THEM FEEL POWERFUL."

Doing caricatures is also a very interesting style. The most challenging part is deciding how to exaggerate your character, and yet still allow people to realize who it is. I don't only need to decide on the characteristics to exaggerate, but the lighting, camera and textures all add to the caricature appearance as well and make the image more fun.

When doing a cartoon image I think the design is important. Good design leads to successful





work. Normally cartoon styles are pure with no need to emphasize specific details.

What guidelines would you offer anyone wishing to model realistic humans considering how much anatomy varies from person to person?

And what do you feel are the crucial things to get right?

I think when making models of realistic humans you should closely follow references, the closer the better. I don't think you need to consider anatomy too much during the early stages, but more the exact integral shape. After that you can focus on some of the details.

Eyes are a crucial feature in any form of portraiture and a focal point that viewers are repeatedly drawn to when looking at an image. How do you go about creating such convincing eyes and do you have any key tips?

Yeah, eyes are the most important feature!
I developed a good habit when I worked on
posters. Characters must look at the camera
to make them feel powerful. I do a test on my

JIAN XU Interview

3dcreative

characters which is to cover their left eye to see if the right eye is looking at the camera. I then do the same to the right eye.

"I AM PROUD OF EVERY IMAGE, ALTHOUGH MAYBE I'LL BE MOST PROUD OF ONE I HAVE NOT YET DONE."

As for modeling the eyes, I don't make them totally circular, but instead a little elliptical. I will make two parts for the eye, one is the eyeball and the other is for reflection.

With regards to your female nude, did you create the texture and wrinkles once she was posed and what was the most difficult aspect to get right?

Yes, first of all I made the pose and then focused on the wrinkles and created UVs specifically for that pose. The most difficult part

is choosing the best pose for my reference as I wanted to show a woman's beautiful shape.

What type of lighting set up do you use to create such convincing renders and what have you found to be the best types of light to use if any?

I prefer to use Area lights, which look more like real life. You can also use them to imitate reflections.

Do you render out a number of passes? How much post work do you do for the benefit of stills?

Actually I do not make many passes; sometimes I only render passes like hair, specular, Z-Depth and shadow.

Of all your portfolio pieces, which are you most proud of and why?

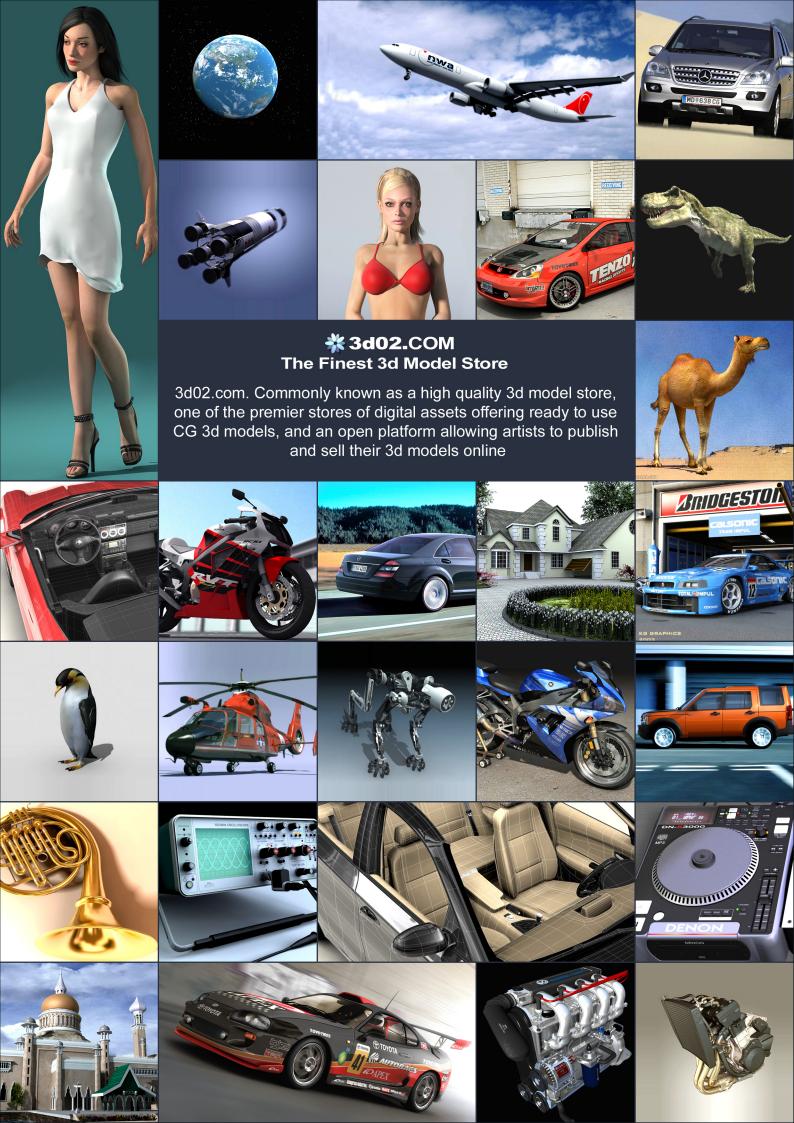
Oh it's hard to say! I am proud of every image, although maybe I'll be most proud of one I have not yet done.













A 3D Mouse revolutionises the way you work with your 3D applications. Pan, zoom and rotate as if you are holding the model in your hand or fly like a helicopter through three-dimensional worlds. It's a level of control that's simply not possible with a traditional mouse and keyboard. Whether you're creating dazzling 3D models or exploring virtual worlds, with a 3D mouse you can set your imagination free!



SpacePilot™ PRO 399.- €*



SpaceExplorer™ 299,- €*



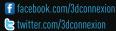
SpaceNavigator™ for Notebooks 129,- €*

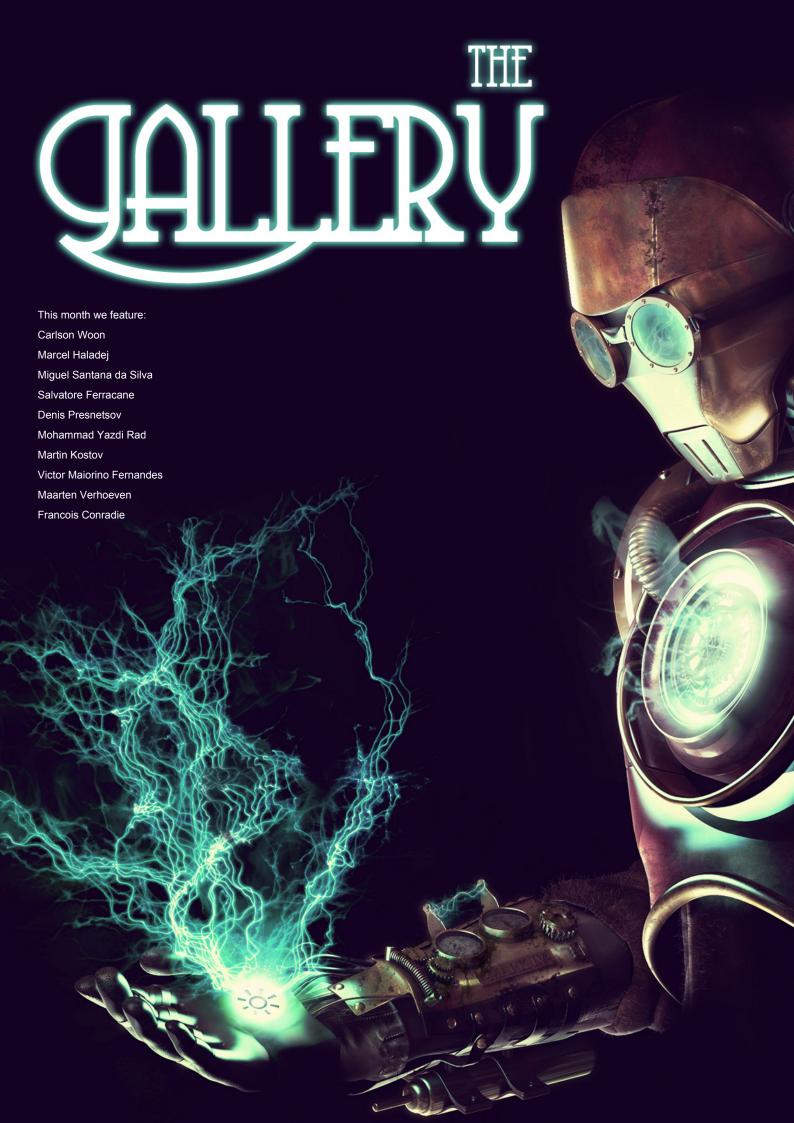


SpaceNavigator™ 99,- €*

For more information, visit

3dconnex





send us your images! | simon@3dtotal.com

10 of the Best THE GALLERY



THE OFFICE

Miguel Santana da Silva http://www.miguelsantana.net miguel.nss@googlemail.com



PRAYING MANTIS MACRO

Victor Maiorino Fernandes http://www.victormf3d.blogspot.com/ victormf3d@hotmail.com



ELECTRIC LOCOMOTIVE

Marcel Haladej http://vsha.cgsociety.org/gallery/747614/ vshacg@gmail.com (Above)

OLD CITROEN

Mohammad Yazdi Rad http://www.yazdirad.com yazdirad@gmail.com (Below)





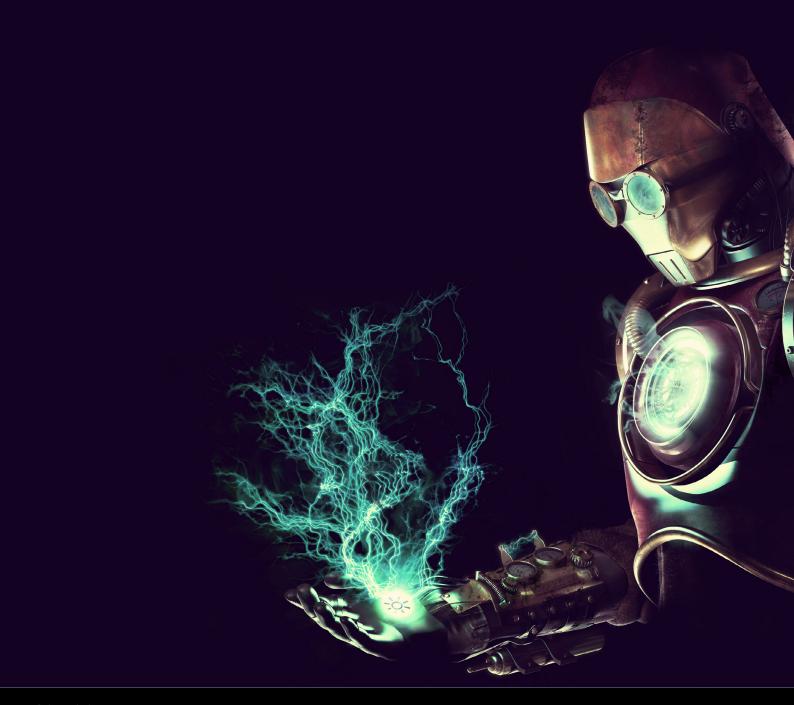
FIRSTLING...

Denis Presnetsov http://3dcreatiff.wordpress.com/ chadorabota@rambler.ru



AH - 1Z VIPER

Martin Kostov http://tornado3d.cgsociety.org/gallery/ tornadooo2@yahoo.com



TIN MAN

Francois Conradie
http://francoisconradie.tumblr.com/
frankskullboy@gmail.com



ON THE HUNT

(c) Bobby Chiu, Imaginism Studios







Medieval Demon

Maarten Verhoeven http://mutte.cghub.com/ darth_mutte@yahoo.com

CREATING THE

CELERITAS

SPACESHIP MODELING & TEXTURING



FOLLOW

This month our artists will show you how to Model the Low-Poly Version of our Spaceship.

So if your interested in seeing the second chapter of this great series, please flip to the back of this magazine and enjoy.

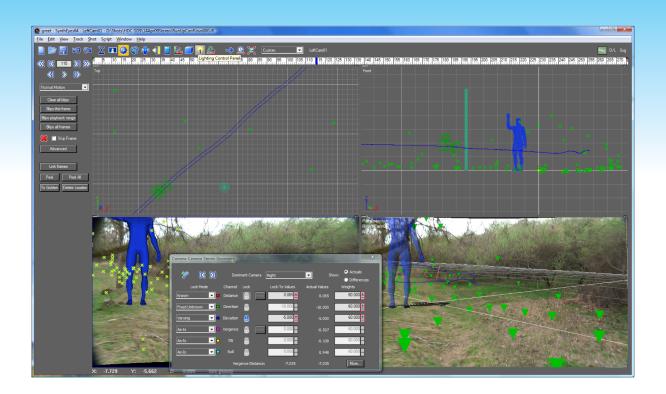
- SDSMAX PAGE 086
 MAYA PAGE 100
- CINEMA 4D PAGE 120

CHAPTER 2 - MODELING THE LOW-POLY VERSION

In this fascinating tutorial series our artists will be guiding us through the creation of a complete spaceship in a scene, from beginning to end. We begin the series in Photoshop, using some of its excellent features to help create a concept, a vital process for anyone hoping to come up with an original design. That design is then passed on to our team of modelers who cover the stages of low and high poly modeling, texturing and post-production. This series is filled with tips to help during all of the stages leading up to the creation of an amazing sci-fi scene with an original spaceship.



Now with STEREOSCOPIC 3D support!



Available in both 32- and 64-bit versions for both PC & Mac starting at \$399

"Whatever happened to `get a cup of coffee while the tracker is solving'?"

"I just loaded a quick file into the demo I downloaded, I am blown away."

"Saved my life!"

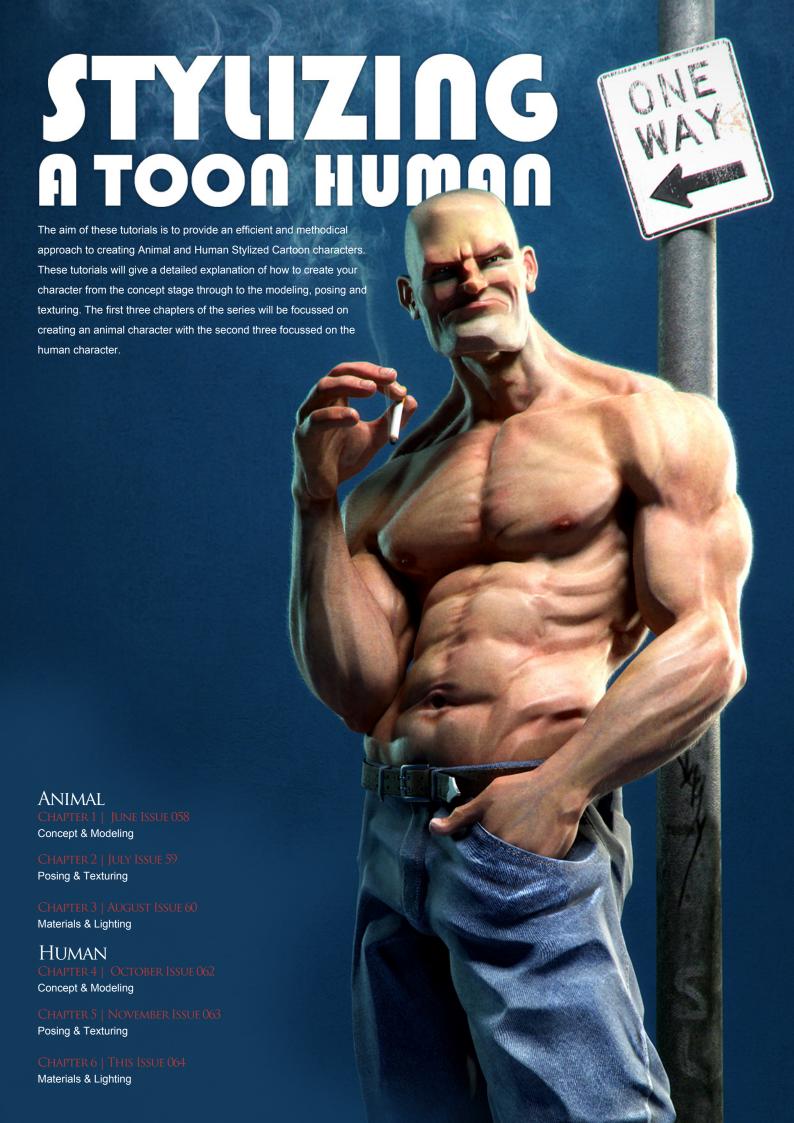
Fixing Shaky Shots
Virtual Set Extensions
Animated Character Insertion
Product Placement in Post-Production
Face & Body Motion Capture
Talking Animals

Typical Applications

"The software is amazing"

"You've got a great product at an incredible price."

ANDERSSON TECHNOLOGIES LLC **http://www.ssontech.com**



HOW TO STYLIZE AND MODEL 'TOON HUMANS' CHAPTER 6 - MATERIALS & LIGHTING

Software used: 3ds Max & ZBrush

INTRODUCTION

Welcome to the third and final chapter of this series. In this chapter we will deal with lighting, materials, render and a bit of post-production. In this tutorial we will use V-Ray as the render engine instead of mental ray, which was used in the Toon Animal series. You will notice that V-Ray uses a completely different relation between values and glossiness compared to mental ray, so when we create the glossiness textures we will be using different color values.

LIGHT CONSIDERATIONS

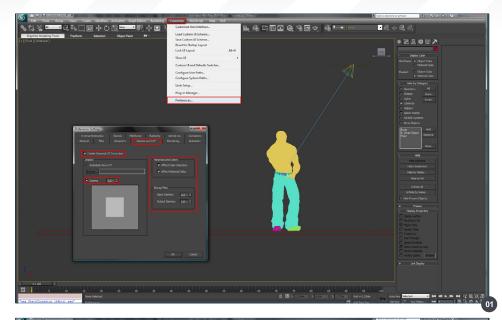
In the Animal Toon series I referred to the benefits of working with lights that behave in a physically correct manner. In order to achieve this we have to introduce a gamma correction and work with lights that decay correctly (at the inverse square of the distance).

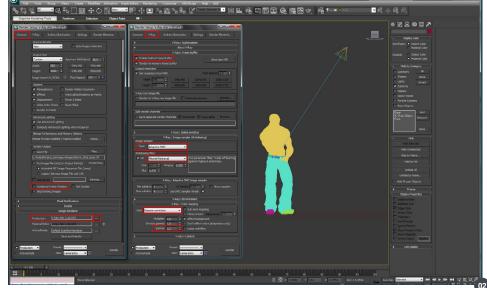
When the light decays at the inverse square of the distance, the light is very intense near the origin, but it will lose intensity quite fast, even though it will keep traveling a long way with a very low intensity. This means that a little difference in the distance from the light to the object can greatly affect the results. In the tutorial I will provide images to help with the light positioning, but you will need to fine-tune that distance by rendering and deciding on what looks good.

GAMMA CORRECTION

Let's correct the gamma for V-Ray (Fig.01).

- In 3ds Max, inside the Customize menu choose Preferences.
- In the Preference Settings window choose the Gamma and LUT tab.
- Turn on the Enable Gamma/LUT Correction.





- Make sure the Gamma value is 2.2.
- Turn on Affect Color Selectors and Affect Material Editor.
- Set the Input Gamma value to 2.2 and the Output Gamma to 1.0.
- Press OK.

SET V-RAY

- In 3ds Max press F10 to enter Render Setup.
- Under the Common tab, disable Rendered
 Frame Window as we will be using V-Ray's
 Frame Buffer instead.
- In the Assign Renderer section click on the "..." button in front of the Production renderer.

- Choose V-Ray Adv 1.50.SP5 (my version of V-Ray is1.50 SP5, you might have a different one).
- Choose the V-Ray tab at the top.
- Under V-Ray Frame buffer, enable Enable built-in Frame Buffer.
- Under V-Ray: Image sampler (Antialiasing), change the image sampler to Adaptive
 DMC and the Antialiasing filter to Mitchell-Netravalli. These are just a matter of personal preference in order to increase visual sharpness.
- In the V-Ray Color mapping section set the Type to Gamma correction and set the Gamma value to 2.2 (Fig.02).



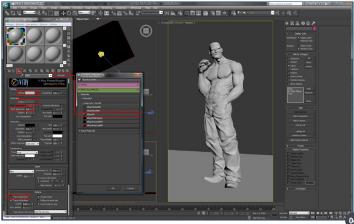


IMAGE PROPORTION AND CAMERA

Let's set the image proportions.

- Press F10 to open the Render Setup window.
- In the Common > Output Size, set the
 Width value to 583 and the Height value to
 1000 pixels.
- Close the Render Setup window by pressing F10 again.
- Choose one of the viewports to be the camera viewport and press Shift + F to show the safe frame. This way the viewport will be cropped with the same proportion of your image render.

To create the camera:

- From the Create tab on the right side panel, choose the Camera icon.
- Choose the Target button (to create a target camera).
- On the Top viewport click and drag to place the camera.
- On the viewport that you have chosen to display the camera, press C in order to see the camera view restricted by the safe frame.
- Use the Top, Left and Front viewports to select and move the camera. If you wish to follow my point of view try to place it as in the image. I have tried to position the camera in order to preserve the character's silhouette (notice how the hand is not



- I have set the lens value to 76 mm under the camera parameters (Fig.03).

BASE MATERIAL

Before starting the lighting, create a simple box as a ground plane (Fig.04).

Let's also create a simple gray material to apply to the whole scene to study the light:

- Press M to open the Material Editor.
- Choose one material slot.
- Click on the Standard button to choose a different type of material.
- From the Materials list, under V-Ray Adv
 1.50.SP5, pick the VRayMtl shader.
- Name the material as "base".

- Set the Diffuse color to R:128,G:128 B:128 by clicking the color swatch.
- Change the Reflect color to R:23, G:23 B:23 by clicking the color swatch.
- Change the Refl. glossiness value to 0.6 to add a bit of specular.
- Under the Options menu, disable the Trace Reflections option, so that no reflections will be calculated.
- Apply the material to all the objects in the scene (Ctrl + A to select all and press the Assign Material to Selection button).

MAIN LIGHT

If you have a good graphics card, 3ds Max has the option of seeing the shadows in real-time in the viewport. It is a good option to set the light direction fast without the need to render (Fig.05).

www.3dcreativemag.com

page 30

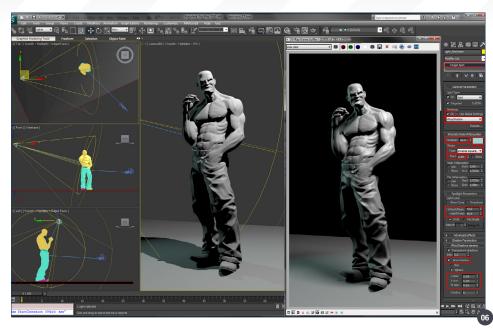
Issue 064 December 2010

- In the camera viewport, on the top left, click on the word that describes the shading mode of your view port.
- Under Lighting and Shadows, enable
 Enable Hardware Shading and Enable
 Shadows.

We will start the lighting by creating our main light source. I had imagined my character standing under a street lamp, so I have decided to create a V-Ray Light with soft shadows coming from the top right of the image, leaving the left side of the character in the shadow.

- From the Create menu on the right, click on the Light icon.
- Change the light from Photometric to V-Ray.
- Click on VRayLight and drag the viewport to create an area light.
- Try to position it as in Fig.05.
- In the VRayLight options, change the Multiplier value to 15.
- Leave the color as pure white.
- I have set the Half-length size to 0.55m and the Half-width to 0.60m.
- I have increased the Sampling Subdivisions to 12 to reduce the noise a bit.
- Render (F9) and adjust the position and intensity.
- **RIM LIGHT 1**

As the left side of the character is in the



shadow, we will create a rim light so that the full silhouette of his body is readable. I have chosen a cool turquoise color to bring some color in and I have tried to position the light in order to leave a bit of darkness between the main light and the rim light to add some "darkness" to the character (Fig.06).

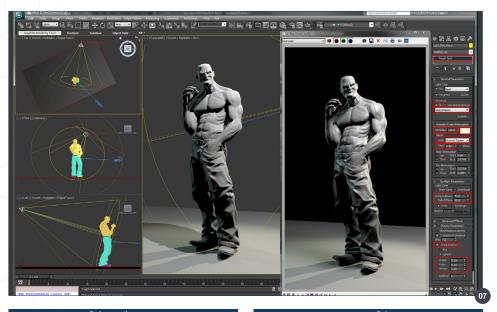
- From the Create menu on the right, click on the Light icon.
- Change the light to Standard.
- Create a Target Spot light.
- Place it on the left side of the image coming from the back of the character.
- Enable Shadows and change the shadow type from Shadow Map to VRayShadow.

- In the Intensity/Color/Attenuation menu, change the Multiplier to 50.
- Set the light color to light turquoise (R:94, G:167, B:156).
- Change the Decay Type to Inverse Square.
- Change the Start distance to 0.3m.
- In the Spotlight Parameters, set the Hotspot to 43 and the Falloff to 66.9.
- In the VRay Shadows parameters, enable Area shadow and set the U, V and W size to 0.1m.
- Press F9 to render and adjust.

RIM LIGHT 2

To add a bit more drama to the image let's place a warmer rim light on the right (Fig.07).

- Create another Target Spot light.
- Place it on the left side of the image, coming from the back of the character (as in the image).
- Enable Shadows and change the shadow type to VRayShadow.
- In the Intensity/Color/Attenuation menu change the Multiplier to 110.
- Set the light color to light yellow (R:255, G:231, B:168).
- Change the Decay Type to Inverse Square.



- Change the Start distance to 0.3m.
- In the Spotlight Parameters, set the Hotspot to 43 and the Falloff to 66.9.
- In the VRayShadows parameters, enable
 Area shadow and set the U, V and W size to 0.1m.
- Press F9 to render and adjust.

AMBIENT LIGHT

In order to fill the black areas, we will create a global dark blue light. It is not a good idea to have completely black areas, because you will never be able to manipulate those image areas in post-production (**Fig.08**).

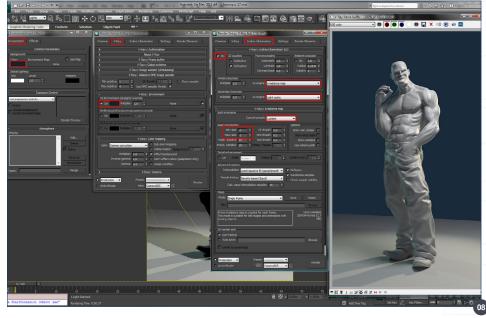
- Open the Environment and Effects window (press 8).
- Set the background color to a dark blue (R:1, G:3, B:6).
- Open the Render Setup window (press F10).
- Under the V-Ray tab > V-Ray Environment, enable the GI Environment (skylight) override.
- Set the color to a dark blue (R:1, G:3, B:6).

Later, if needed, you can use the Multiplier value to manipulate this light.

- Change to the Indirect Illumination tab.
- Under V-Ray: Indirect Illumination (GI) tick On to turn on the GI.
- Leave the Primary bounces as Irradiance map and change the Secondary bounces to Light cache.
- Under Irradiance Map, change the Current preset to Custom.
- Set the Min rate to -3 and the Max rate to -1.
- Don't change the Light cache parameters.
- Press F9 to render.

EYES MATERIAL 1

Let's start by creating the cornea material. In this tutorial I have used a fairly simple eye model; if you have followed the animal cartoon tutorial you can re-use the more complex eye model we created there (**Fig.09**).

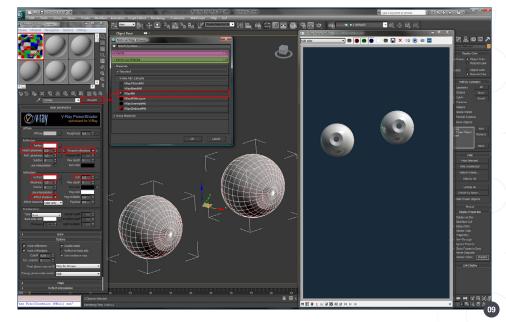


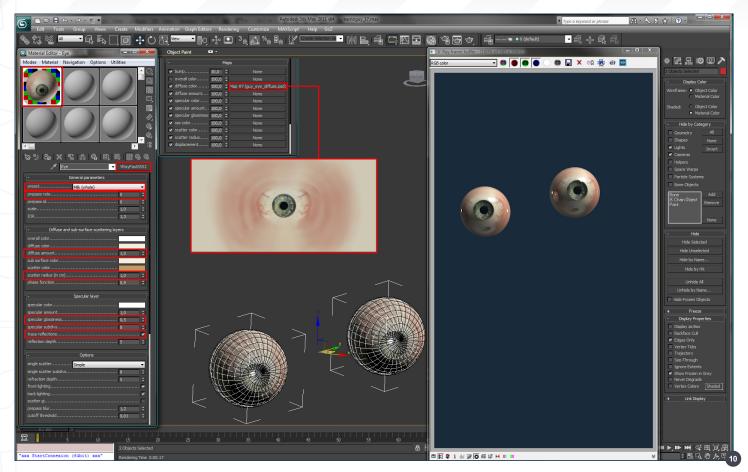
- Open the Material Editor (press M).
- Choose a Material Editor slot and press the Standard button. Choose VRayMtl under V-Ray Adv 1.50.SP5.
- Under Reflection, change the Reflect color to white (R:255, G:255, B:255).
- Press the "L" button in front of the Highlight glossiness to unlock and be able to use specular highlights which have independent glossiness values from the Reflection glossiness.
- Set the Highlight glossiness value to 0.9.
 This will create a little specular highlight.
- Turn on Fresnel reflections.
- Under Refraction, change the Refract color

to white (R:255, G:255, B:255).

- Change the IOR value to 2.0. This value not only affects the refraction distortion but also the effect of Fresnel reflections.
- Enable Affect shadows in order for the refraction to affect the shadows and make them transparent, otherwise the shadows will be opaque.
- Select the cornea objects and apply the material by pressing the Assign Material to Selection button.
- Render.

In the image I have isolated the eyes in order to be clear what we are doing.

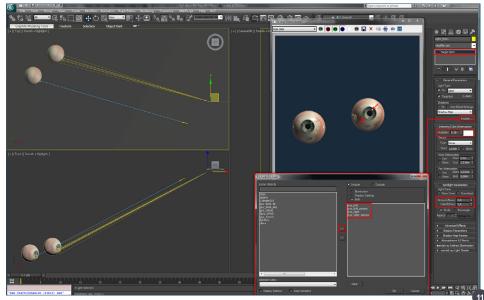




EYES MATERIAL 2

To create the eye material we will use the VRayFastSSS2 material. Subsurface scattering is important to recreate the white of the eye (Fig.10).

- Open the Material Editor (press M).
- Choose a Material Editor slot and press the Standard button. Choose VRayFastSSS2.
- Under General Parameters change the preset to Milk (whole). We will use this preset because the color and settings are very near to what we need.
- Increase the pre-pass rate to 0.
- Under Diffuse and sub-surface scattering layers, change the diffuse amount to 1.0 and decrease the scatter radius to 1.
- Under Specular layer change the specular glossiness to 0.5 and turn on trace reflections.
- Under Maps place the "eye_diffuse.PSD" in the diffuse color slot.
- Select the eye objects and apply the



material

- Render.

EYE'S HIGHLIGHTS 1

We will create some highlights on the eyes and make the lower part of the iris brighter by using a spotlight without shadows and only including the eyes (Fig.11).

- From the Create menu on the right, click on the Light icon.
- Change the light to Standard.
- Create a Target Spot light.
- Place it coming a bit from above and from the right of the image, hitting the lower part of the iris. The objective is to create a highlight at the upper right part of the cornea

and another at the lower left part of the iris.

- Make sure the Shadows are off.
- Press the Include button and from the left list choose the eye and cornea objects.
 Press the ">>" button to move these objects to the inclusion list. This way only these objects will receive light. Press OK.
- In the Intensity/Color/Attenuation section change the Multiplier to 0.18.
- Set the light color to white (R:255, G:255, B:255).
- In Spotlight Parameters, set the Hotspot to0.8 and the Falloff to 2.8.
- Copy the light and position it to hit the other eye in the same way.
- Press F9 to render and adjust.

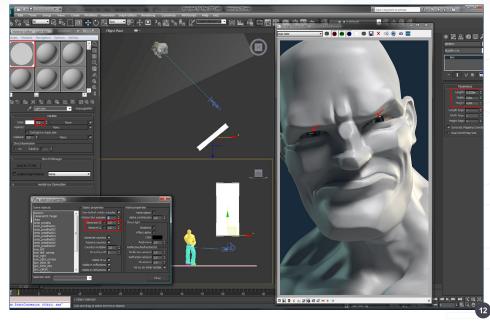
EYE'S HIGHLIGHTS 2

In order to further enhance the reflections, create a light box that will show up in the eye's reflections (as in a photography studio). Let's start by creating a self illuminated material for the light box (Fig.12).

- Open the Material Editor (press M).
- Choose a Material Editor slot and press the Standard button. Choose VRayLightMtl.
- Leave the color as white.
- Change the intensity value to 0.6.
- Create a Box primitive with a length of 0.25m, width of 2.0m and height of 4.0m.
- Apply the material to the box.
- Right click on the box object and choose VRay properties.
- In the VRay object properties, disable
 Generate GI and Receive GI. We don't want
 the box to illuminate the scene, but just to
 enhance the reflection highlights. So we are
 disabling the GI.
- Position the box as in Fig.12 (my box is about 6 meters away from the character).
- Render and adjust the box position in order to create highlights on the eyes.

Skin Material 1

Before creating the skin material we need to create some more textures. To create the



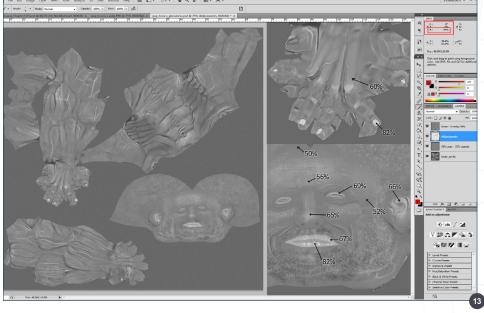
texture that will control the glossiness amount on the skin we will use the cavity texture as a base (Fig.13).

- Open Photoshop.
- Open the "body_cavity.PSD" image generated in ZBrush during Chapter 2.
- To tone down the values, create a new layer on top and fill it with a mid gray color (R:128, G:128, B:128). Change this layer's opacity to 55%.

As explained in the Toon Animal tutorial, you can check the values of the image by keeping the Info window open (press F8) and setting

the displayed color to HSB. As you move the cursor over the image, the B value (brightness) indicates the glossiness percentage of that pixel.

- Create a new layer on top. Select the brush tool (B) and set the brush opacity to 5%.
- To increase the glossiness percentage paint with white, to decrease it paint it black. While you paint keep checking the B value on the Info window. The idea is to set the correct percentages in each body area.
- I have used this technique to make the lips, interior of the ears, forehead, tip of the nose and nails glossier. In Fig.13 I have marked a few values that you can use as reference.

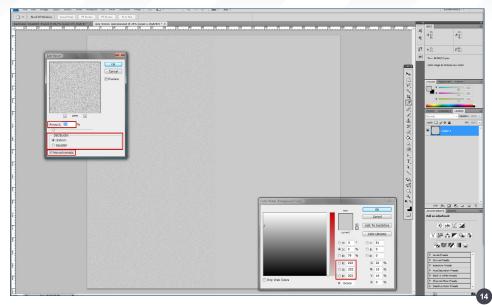


- On top of everything, create a new layer. Fill it with a gray color (R:128, G:128, B:128).
- From the Filter menu choose Add Noise from the Noise sub menu.
- Set the Amount to 40%, Uniform distribution and turn on Monochromatic.
- Set the layer mode to Overlay and the Fill value to 34%.
- Save it as "body_glossiness.PSD".

SKIN MATERIAL 2

We will create a noise map to work as a specular map and break the highlight reflections. You could also create a procedural map for this effect as an alternative in 3ds Max (Fig.14).

- Create a new document with 4096x4096 pixels.
- Fill the document with a light gray (R:202, G:202,B:202).
- From the Filter menu choose Add Noise from the Noise sub menu.
- Set the Amount to 25%, Uniform distribution



and turn on Monochromatic.

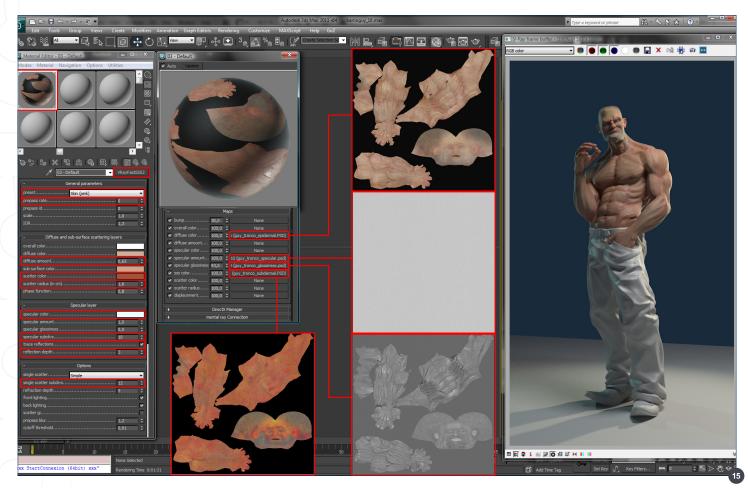
- Save it as "body_specular.PSD".

SKIN MATERIAL 3

With the "body_specular" and "body_glossiness" textures created in the previous step, along with the "body_epidermal" and "body_subdermal" textures created in the second chapter, we will

set up the skin material (Fig.15).

- Open the Material Editor (press M).
- Choose a Material Editor slot and press the Standard button. Choose VRayFastSSS2.
- Under General Parameters change the preset to Skin (pink).
- Increase the pre-pass rate to 0.
- Under Diffuse and sub-surface scattering



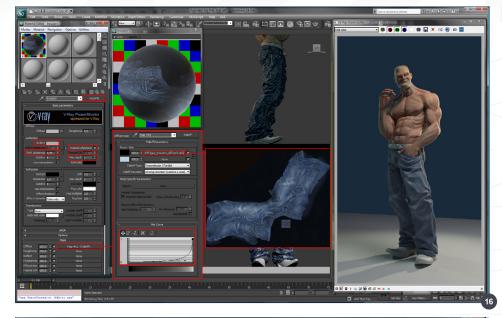
layers, change the diffuse amount to 0.65, change the scatter color to R:89 G:23 B:10. Also change the scatter radius to 1.6cm.

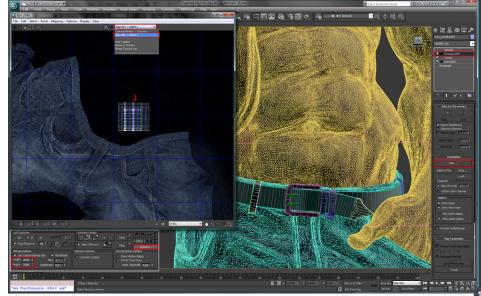
- Under Specular layer, change the specular color to a very light blue (R:214 G:255 B:255). Increase specular subdivisions to 10. Turn on trace reflections and lower the reflection depth to 3.
- Under Options, increase the single scatter subdivisions to 12.
- Under Maps place the "body_diffuse.PSD" in the diffuse color slot.
- Place the "body_specular.PSD" in the specular amount slot.
- Place the "body_glossiness.PSD" in the specular glossiness slot.
- Place the "body_subdermal.PSD" in the sss color slot.
- Select the body object and apply the material.
- Render.

Trousers Material 1

Let's create the material for the trousers (Fig.16).

- Open the Material Editor.
- Choose a Material Editor slot and press the Standard button. Choose VRayMtl under V-Ray Adv 1.50.SP5.
- Under Reflection, change the Reflect color to gray (R:108, G:108, B:108).
- Set the Refl. glossiness value to 0.45.
- Turn on Fresnel reflections.
- Lower the Max depth to 1 to speed up the render time as inter reflections are not very noticeable with this glossiness values.
- Under Maps click on the Diffuse slot and from Maps/Standard pick Falloff.
- Click Falloff to set its parameters.
- In Falloff Parameters, in the Front: Side section, place the "trousers_diffuse.PSD" created in Chapter 2 in the upper slot.
- In the lower slot, click the color swatch and set it to a light blue (R:137, G:165, B:199).
- There is a Mix Curve at the bottom. Manipulate it in order for the light blue to





only appear at grazing angles (you can check the curve in Fig.16).

- Select the trousers object and apply the material.
- Render.

Trousers Material 2

If you remember, in Chapter 2 we placed some trouser straps in the trousers texture. It is time to apply this texture and set the UVs to the straps (Fig.17).

- Select all the trouser straps and apply them the same trousers material we have created in the previous step.
- Select one of the straps.

- Apply an Unwrap UVW modifier.
- Press Edit.
- Click the Pick texture slot on the upper right and choose the Falloff map. This way vou'll be able to see the trousers texture on the background to align the UV coordinates.
- To display the texture with a higher resolution, click on the Option button and under Bitmap Options set the Width and Height to 2048, for example.
- As we had turned on the Generate UVs option in the Sweep modifier, the texture coordinates of the strap have a nice rectangular form, exposing the back and front of the strap.
- Select the strap element and rotate and

scale it to align with the image strap.

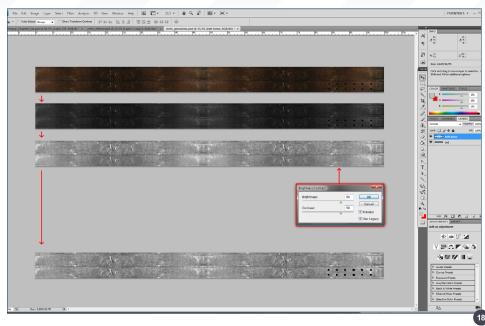
- Repeat the procedure for all the straps.

BELT MATERIAL 1

To create the belt material we need to create another texture which will be used as bump and glossiness map (Fig.18).

- In Photoshop, open the "belt_diffuse.PSD"image created in Chapter 2.
- When we created the belt texture, the holes were placed in different layer. Select the layer of the belt without the holes.
- Desaturate the image (press Shift + Ctrl + U).
- Choose Image/Adjustments/Brightness
 Contrast.
- Set the Brightness to 50 and the Contrast to 50.
- Desaturate the holes too.

If you have previously merged the belt holes with the belt, don't worry. Apply all the



adjustments and paint the holes black.

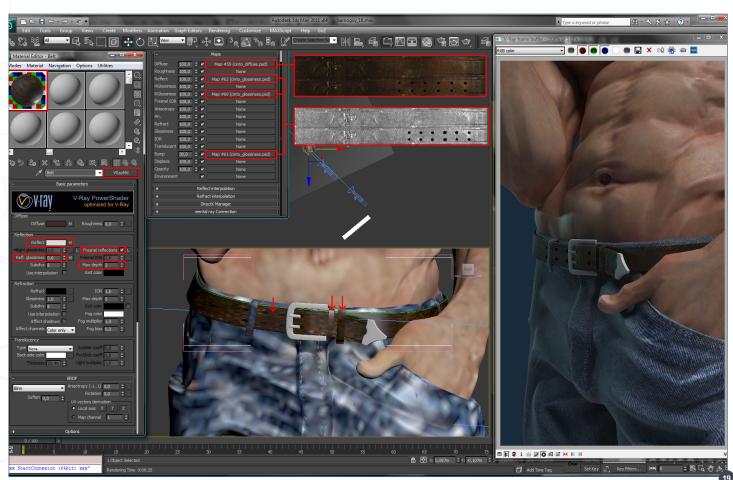
- Save as "belt_glossiness.PSD".

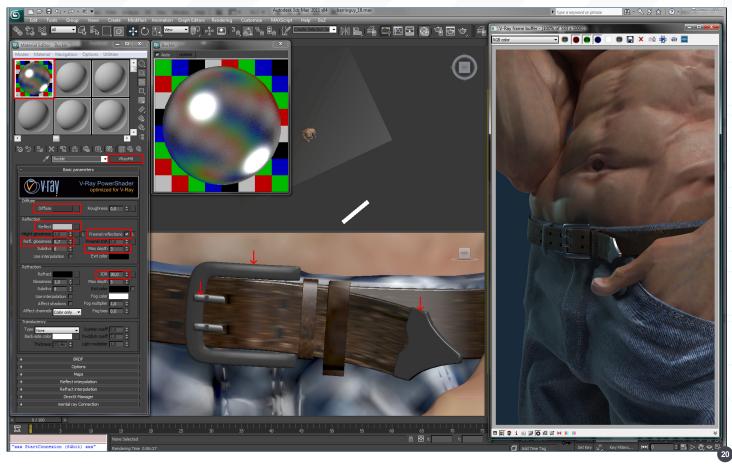
BELT MATERIAL 2

To create the belt material in 3ds Max (Fig.19):

- Open the Material Editor.

- Choose a Material Editor slot and press the Standard button. Choose VRayMtl under V-Ray Adv 1.50.SP5.
- Under Reflection, change the Reflect color to gray (R:181, G:181, B:181).
- Set the Reflection glossiness value to 0.6.
- Turn on Fresnel reflections.





- Lower the Max depth to 2.
- Under Maps, place "belt_diffuse.PSD" in the Diffuse slot.
- Place the "belt_glossiness.PSD" in the Reflect, RGlossiness and Bump slots.
- Select the belt object and apply the material.
- Apply the same material to the leather straps. As for the trousers straps, use the

Unwrap UVW modifier to scale and move the UV coordinates to align them with a part of the belt texture that doesn't have holes.

- Render.

BELT MATERIAL 3

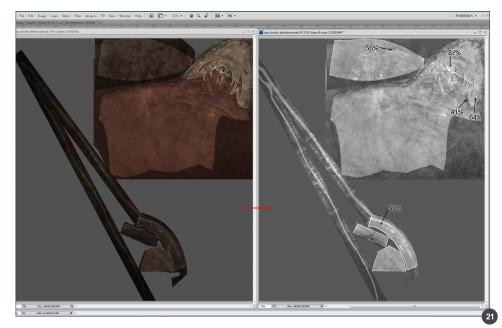
For the metallic parts of the belt we will create a simple metal material (Fig.20).

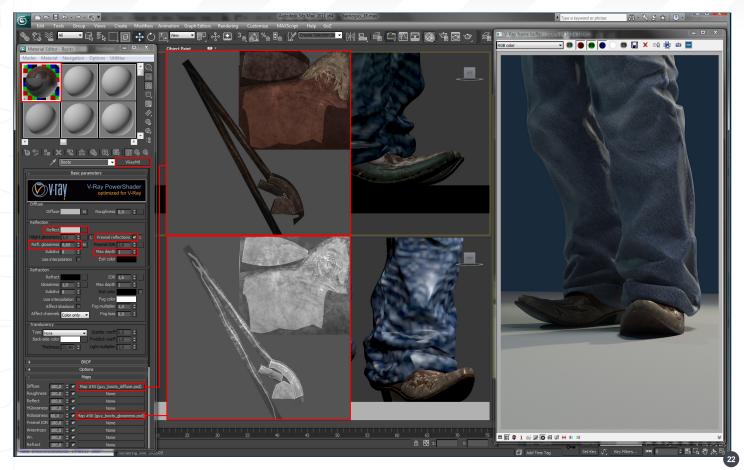
- Open the Material Editor.
- Choose a Material Editor slot and press the Standard button. Choose VRayMtl under V-Ray Adv 1.50.SP5.
- Change the Diffuse color to dark gray (R:11, G:11, B:11)
- Under Reflection, change the Reflect color to a light gray (R:137, G:137, B:137).
- Set the Reflection glossiness value to 0.7.
- Turn on Fresnel reflections.
- Lower the Max depth to 3.
- Under Refraction, set the IOR value to 30.
- Apply the material to the buckle, pins and tip of the belt.
- Render.

BOOTS MATERIAL 1

We will create a glossiness texture for the boots, based on the diffuse texture created in Chapter 2 (Fig.21).

- Open "boots_diffuse.PSD" in Photoshop.
- When we created this texture we started with a cavity map in Overlay mode, added some textured color layers below created





layers on top of that with scratches and dirt.

- Don't touch the cavity layer and the scratch and dirt layers.
- Select each texture color layer below the cavity map layer and desaturate them (Shift
 + Ctrl + U). In each layer shift the Brightness and Contrast values up in order to have an average pixel value of about 60-65% (Check the B value of the HSB in the Info panel). I

have marked some values on the image for your reference.

- Save as "boots_glossiness.PSD".

BOOTS MATERIAL 2

To create the boot material in 3ds Max (Fig.22):

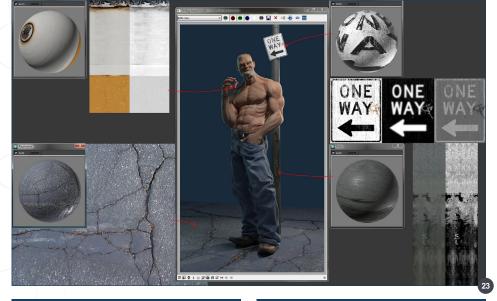
- Open the Material Editor.
- Choose a Material Editor slot and press the

Standard button. Choose VRayMtl under V-Ray Adv 1.50.SP5.

- Under Reflection, change the Reflect color to gray (R:155, G:155, B:155).
- Set the Reflection glossiness value to 0.65.
- Turn on Fresnel reflections.
- Lower the Max depth to 1.
- Under Maps, place "boots_diffuse.PSD" in the Diffuse slot.
- Place the "boots_glossiness.PSD" in the RGlossiness slot.
- Select the boots objects and apply the material.
- Render.

COMPLETING THE ENVIRONMENT

To complete the environment I have added a pole with a sign and an old cigarette prop. These were made with simple primitives. The pavement was also given a broken asphalt texture. As these are just environment props, their creation is not going to be detailed, however, in Fig.23 you can see all the maps

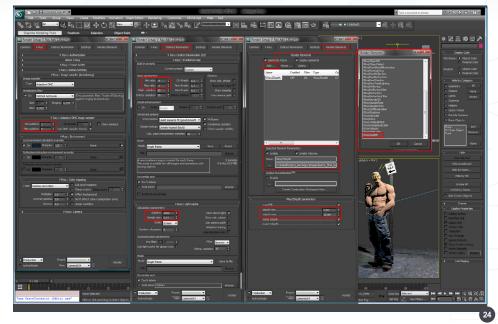


that were created to make the materials. All the materials use the VRayMtl shader and follow the same logic as the materials we created during the rest of the tutorial (Fig.23).

RENDERING

I have rendered the final image with 5000 pixels of height. I will share with you the render settings I have used (Fig.24).

- Press F10 to open the Render Setup window.
- In the Common, tab under Output Size,
 click the lock icon in front of Image Aspect.
 That will keep the image proportion when
 you change the width or height of the image.
 Change the output to 5000 pixels of height.
- In Render Output, enable Save File and set a file name and destination for the image. Choose a lossless format like TIF.
- In the V-Ray tab, in the V-Ray: Adaptive DMC image sampler section, increase the Min subdivisions to 2 and the Max subdivisions to 6.
- In the Indirect Illumination tab, in the V-Ray:Irradiance map section, set the Min rate to -4 and the Max rate to -1. In the V-Ray:Light Cache section increase the Subdivisions to 2000 and set the sample size to 0.01.
- We will also need to render a ZDepth image to use in the final composition. Choose the



Render Elements tab and click the Add button. From the list pick VRayZDepth.

- Set the file name and location to save the VRayZDepth file. Use a 16 bit TIF format to have a richer grayscale gradient.
- In the VRayZDepth parameters I have set the ZDepth min to 2.0m and the ZDepth max to 10.0m.
- Render.

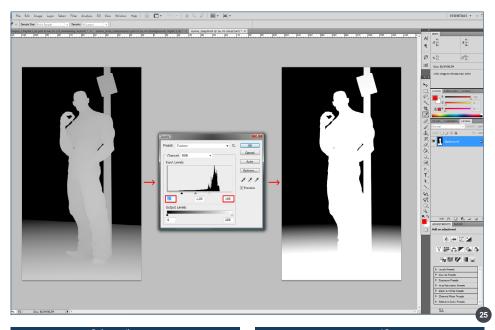
ZDEPTH

We will now start the post-production phase (Fig.25). The reason for rendering the ZDepth channel is to create a soft transition between the floor and the background color:

- Open the ZDepth image in Photoshop.
- Press Ctrl + L to open the Levels Adjustment window. Set the Min input level to 57 and the Max level to 165. Your values might be slightly different, but the objective is to have a completely white character and a gradient that starts near the character's feet and ends at the floor limit. Check **Fig.25** to see what we are after.
- Select All (Ctrl + A) and Copy (Ctrl + C) to copy the image to the buffer.

COMPOSITION 1

- Open the render image.
- Open the Channels window (Go to the Window menu and choose Channels).
- In the Channels window, click on the icon on the top right and choose New Channel.
- Press Ctrl + V to paste the Zbuffer image into this channel.
- Ctrl + Click on the name of the Channel you have just created to make a selection.
- To see the original image, press the RGB channel.
- Go to the Layers window.
- Create a new layer on top of the background.
- Go to the Layer menu at the top bar and under Layer Mask choose Hide Selection.
 You have just created a mask for the layer.



- In the selected layer, in the Layers window, you have two little thumbnails: one for the image and another one for the mask. Click on the image thumbnail (which is empty) to paint on the image instead of on the mask.
- Using the color picker, pick the blue color of the background.
- With the bucket tool (press G), fill the layer with the blue color. We now have a smooth gradient blending the floor and the background color (Fig.26).

COMPOSITION 2

Apply a Levels Adjustment layer and adjust the levels by raising the Min input level and lowering the Max input level to get more contrast in the image and make it more appealing. The values depend on your image. My image was a bit dark so I have raised the Min input to 13, set the Mid input to 0.95 and lowered the Max input to 128. As there is some light coming from above, I have created a gradient to fake the light scattering in the atmosphere. To do this create a new layer (use the same mask as before if you don't want to include the character in the light) and create a light yellow gradient. Set the layer mode to Color Dodge and a fill rate of 50% (Fig.27).

COMPOSITION 3

To create the smoke coming out of the cigarette I have used some smoke images against a black background. I have placed the smoke images in new layers and used the Screen blending mode to integrate the smoke with the background. Use the Fill value to adjust the smoke transparency. Also use the eraser with a soft brush to shape the smoke (Fig.28).

CONCLUSION

This ends the image composition and also this tutorial (Fig.29).

I hope you have enjoyed the tutorial and that you have created a great character and learned some new tricks. Feel free to drop me an e-mail if you need any clarification! See ya!













Trees, forests, mountains, oceans, skies... **Create Entire 3D Environments**



FREE! The perfect introduction to 3D!



Vue for 3D Enthusiasts Starting from \$29.95



Vue for 3D Artists Starting from \$199



Professional Solutions Starting from \$995

New features include:

- Post-Render Relighting
- Improved Terrain EditorDramatically Reduced Flickering

- HDR Multi-pass Rendering
 Hyperblob Technology
 Interactive Network Rendering
- New Interface Design

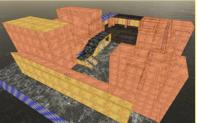
Read more on our website, and discover our plugins for 3ds Max, Cinema 4D, Maya, LightWave, Softimage, SketchUp



THE ITALIAN COURTYARD

UNREAL GAMES ENGINE TUTORIAL SERIES











CHAPTER 2 - BSP CREATION - DRAFT LIGHTING

CHAPTER 1 | NOVEMBER ISSUE 063 Project Planning & Software Explanation

CHAPTER 2 | THIS ISSUE BSP Creation - Draft lighting

CHAPTER 3 | JANUARY ISSUE 065 Static Meshes and Texturing Part 1

CHAPTER 4 | FEBRUARY ISSUE 066 Static Meshes and Texturing Part 2

CHAPTER 5 | MARCH ISSUE 067 Layout - A

CHAPTER 6 | APRIL ISSUE 068 Layout - B

CHAPTER 7 | MAY ISSUE 069 Lighting and Post Effects - A

CHAPTER 8 | JUNE ISSUE 070 Lighting and Post Effects - B The video game industry continues to thrive and grow at an alarming rate, and is swiftly becoming the most obvious option for employment for anyone in the CG industry. This brand new series of tutorials provides an opportunity for anyone trying to get into the business to learn how to create a basic game level portfolio piece that would impress any potential employer. Using the Unreal Development Kit, UK-based artist Andrew Finch talks us through the entire creation process, from downloading the free software and choosing its settings, to importing and texturing accessories. This really is a must have for anyone interested in gaming or game design.

Unreal Games Engine Tutorial - Chapter 2: BSP Creation - Draft Lighting

Software used: UDK (Unreal Development Kit)

Welcome to part two of this tutorial series. The point of this tutorial is to create a portfolio piece from start to finish. This chapter will cover creating the BSP geometry that is the foundation of this level. Before we start adding lots of detail we need to make sure the level looks and feels right and we will use BSP brushes to carve out the geometry quickly and easily. So what exactly is BSP?

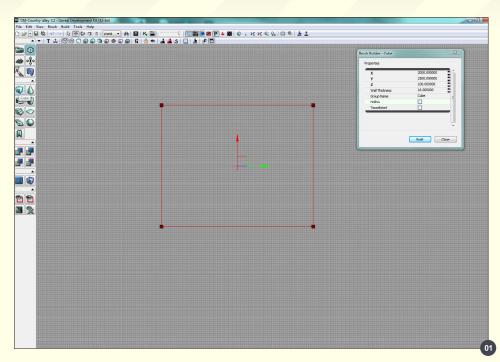
BSP Geometry - This is basic geometry that is created in the UDK engine and can be textured in the same way you would texture geometry in a 3D package. This is the base that we will build upon to get a detailed environment. This step is important because it shows us how big the level will be and it will allow us to move about in the world and get a feel for the space and make sure it looks right. The BSP geometry is easy to edit so if something is not right we can fix it quickly. If we were to create the whole level from complex static meshes it would take a lot longer to make edits.

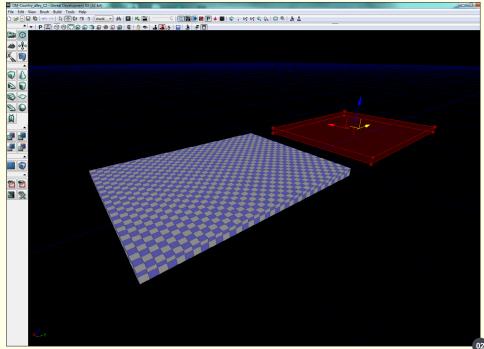
We will also add temporary textures to the geometry and basic lighting so we can run around the level and make sure it looks correct. By the end of this tutorial we will have a basic level which we can then build on and add more detail to, eliminating as much re-work as possible.

So let's start UDK and begin

In the previous chapter I explained the UI and what each tool did so in this chapter I will assume you are aware of where the tools are.

To start we need to make sure we are using the correct method to create geometry. There are two modes: addictive, which allows you





to add geometry to an empty environment or subtractive, which allows you to cut away geometry. I prefer to use the adding method.

Click File > New Map and select Additive for the geometry style.

Right-click on the Cube BSP brush to bring up the settings window (**Fig.01**). Use the settings shown in the screen shot. You don't have to be exact at this stage because we will be able to

make changes at any point. This is what's good about using BSP geometry to start your level; it's so easy to make changes quickly.

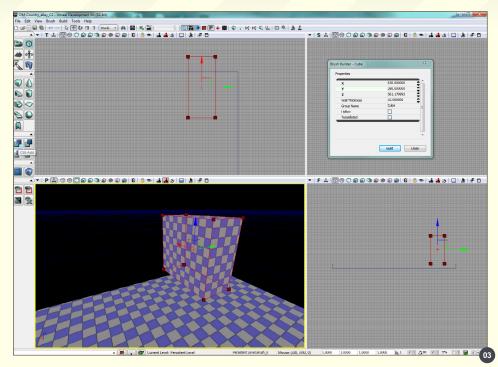
With your brush now in place you need to add the geometry so click Add and you will see the blue and white checkered geometry appear where your Cube brush is. You can move the brush to the side so you can see your new geometry (Fig.02). If you look in the other viewports you will see the new geometry has a

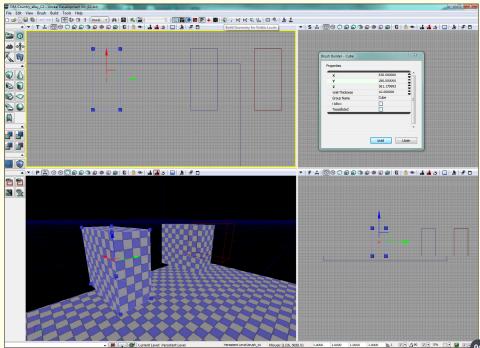
Chapter 2 | Unreal Games Engine Tutorial Series THE ITALIAN COURTYARD

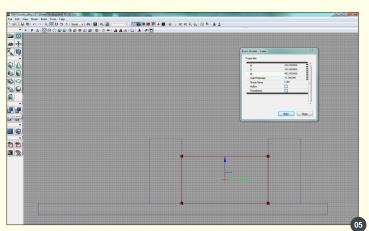
blue wireframe. If the geometry looks black it is because you are viewing in Lit Mode and as you do not have any lights in the scene it won't show up. Simply switch the viewport to Non Lit Mode, (we will add lights later in the tutorial). If you get stuck and can't find the tools, refer to Chapter 1 for a breakdown of the UI. This geometry will be our base that the player walks on and what we build our structures on. Remember, we will add more detail later so keep it simple at the moment so we can make quick edits if needed.

We will now block out one of our buildings. As we did for the floor right-click on the Cube Builder brush to bring up the settings window, and use the settings I have provided (Fig.03). I found these settings worked best by just experimenting; we don't need to be exact at this point. In the screenshot I have shown the other viewports to show the position of the building on the base. Click Add again and your blocked out building should appear.

Now we have our first building added to the scene we can duplicate it around our environment to quickly block out our scene (Fig.04). In the top viewport select the blue wireframe of the building, press and hold Alt, and drag the building to the Y axis. You will see that a copy of the building has been created. You will be able to see the second building's wire mesh in the top viewport but no new geometry in the camera viewport. This is because we need to rebuild the geometry, because already existing geometry has been

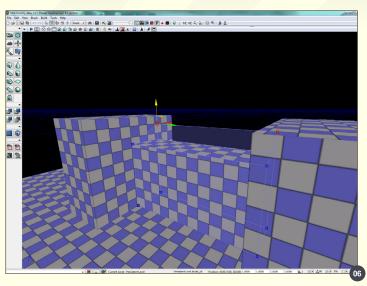


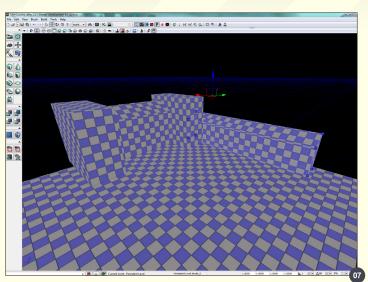




edited. When you create geometry from a BSP builder brush UDK automatically builds the new geometry; we have to do this manually when we edit existing geometry. Click Build Geometry (I have hovered my mouse over this icon in the top right section of the UI. You can see the explanation of the tool now visible in the screenshot).

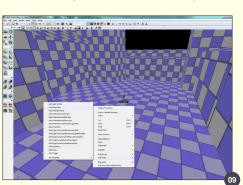
To link these buildings I used these settings to create the geometry (Fig.05). Position the brush between the two buildings and make sure it sits perfectly on the base geometry. If you don't do this you will have a gap under your building and it will look like your building is floating. I've shown the front viewport in this screenshot to show its position more clearly. You





can see it's not as tall as the other buildings. This is because I wanted to create an interesting silhouette and break up the skyline. Also I want this roof to be pitched a little to add more interest. Click Add to build the new geometry.

To create the pitched roof we need to edit the geometry. This is done in the same way you would do it in any 3D software package, by moving verts or edges (Fig.06). You need to enable Edit Geometry mode, which is located next to the camera icon; I have it selected in the screenshot. This will pop up a new window with some editing tools to allow us to add cuts and extrude faces - a very basic version of the tools you have in 3D packages. We don't need to use the tools at the moment so this window can be moved out of the way. You should notice now we are in Edit Geometry mode that the verts have appeared and we can now select them. Holding Ctrl to allow us to select multiple verts, select the two upper verts at the back of the building and drag them in the Z axis to create a pitched roof. Again, no need to be exact just do



enough to give the impression of what we want. Because we have edited existing geometry we need to rebuild the geometry so we can see our changes in the camera viewport.

DM-Country_alley_C2 - Unreal Development lit (32-bit)
e Edit View Brush Build Tools Help

- 교 및 도 교 및 도 교 및 문 및 대 대 Wurkl - 최 및 대 및 K. 및

₩ •\$•

. . .

Using the methods described above, copy the pitched roof building and position it as shown in the viewport (Fig.07). Then rotate the building 90 degrees (to quickly cycle through Move, Rotate and Scale, press the space bar). When you have the new geometry in place re-build the geometry to show your new building.

select the three buildings, duplicate them, drag

them to the other side of the floor and rotate them 180 degrees (Fig.08). Once these building are in place you can vary their size a little and push one or two of them back just to add variety. Don't be exact, just make sure all the buildings are sitting on the floor geometry so they are not floating. Re-build all geometry to make sure your changes are all up to date in the camera viewport.

Now try this in game. This will give us the opportunity to test the scale and layout of the level so far (Fig.09). In order to play this level we need to tell the engine where we want the player to start. We do this by adding a Player

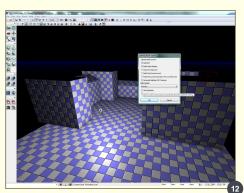
To complete this section of the environment

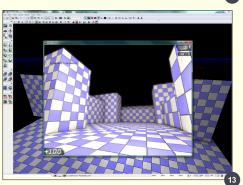
Chapter 2 | Unreal Games Engine Tutorial Series THE ITALIAN COURTYARD

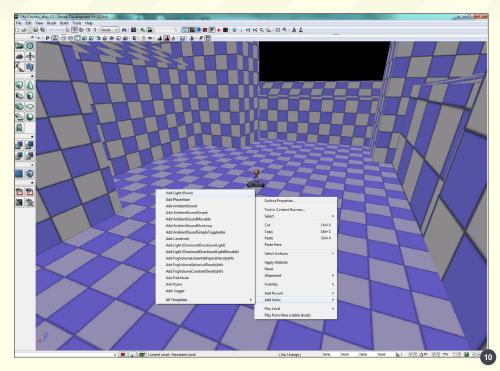
Start Actor. Click on the floor so it turns blue and with the mouse on the area you want the Actor to be placed, right click to bring up the options. Navigate to Add Actor > Add Player Start and you will then see a joystick icon appear. We can't play the level yet because we won't be able to see where we are going so we need to add lights to the scene.

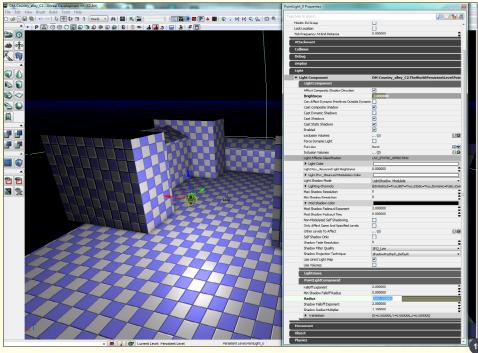
Using the same method as above, select the floor so it turns blue and right click. Then navigate to Add Actor > Light (Point) (Fig.10). This will add a light bulb icon to the screen. You will have to make sure you switch your viewport to Lit Mode, so you can see the affect the lights have on the scene. With the light still selected move it above the top of the buildings. This will only be a draft lighting setup so we can see the level properly. Press F4 to bring up the light settings (Fig.11). There is no need to be exact with the settings; don't spend too much time on them. Increase the Radius of the light enough to encompass the whole scene and also adjust the brightness if needed, to make sure all of the level is illuminated.

The level is almost ready for viewing in game! But first we need to build the level. This builds







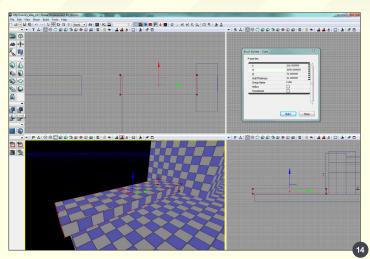


the changes to the geometry and bakes all the lighting. As our level is just getting started and is very basic it won't take very long to build. In the build section of the GUI, to the right of where you click to build geometry, there is an icon with a cube and light bulb. Click on this to bring up the options (Fig.12). You can leave these settings as default except for the Lightmass tick box - make sure you switch this off. Every time you build your level you will need to switch this option off because we don't have Lightmass

setup yet. Once UDK has built your level you will notice a slight change in the viewport.

This is because the lighting has been properly calculated and looks better.

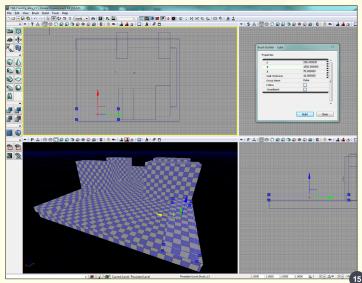
Time to play the game! Click the joystick on the far right of the build tools and the level will load up in a new window (**Fig.13**). You can now walk around and get a feel for the environment. If the scale doesn't feel right then go back and change your buildings until you get a result you are

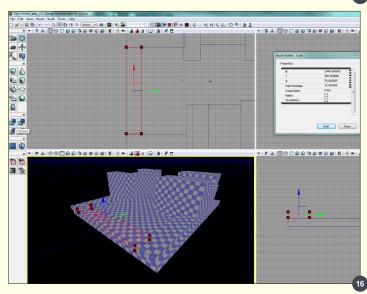


happy with. I'm quite happy with what we have so far and so we can move onto finishing off the base of the level.

There is a large hole to the left of the buildings where we haven't built any geometry yet. We need to fill all the gaps with something. The player can never be able to see outside the world, otherwise it will ruin the illusion and just spoil the level. I want to do something different with this side of the level. I want the player to go inside some sort of structure as this will give this part of the level its own identity and atmosphere.

Using the same method as before, create a small platform that stretches from the buildings to the end of the floor. In the screenshot I've shown the settings I used (Fig.14). When you play the level again you may find the player can't step up onto this platform; this is ok because we will add stairs to allow the player to get up onto the platform later. For the time being you will have to jump up there.



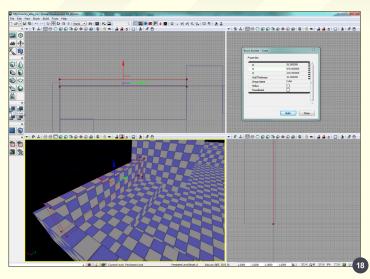


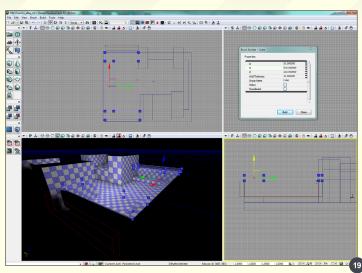
| Control Level | Part | Control Level | Part

In the top viewport select the new platform and Alt + drag it to the opposite side of the floor to create a duplicate (**Fig.15**). Click Re-Build Geometry to update the camera viewport with the new geometry.

You can create the connecting platform either by using the method above, rotating it and then editing the verts to the size you need, or you can create a new cube and position it in place (Fig.16). This is the option I chose but it is up to you. Either way you will get the same result.

We now need to build the walls around the platforms to close the area completely (Fig.17). Use the settings I have provided for the back wall and side wall (Fig.18). Alt + drag a duplicate wall to the other side of the platforms.

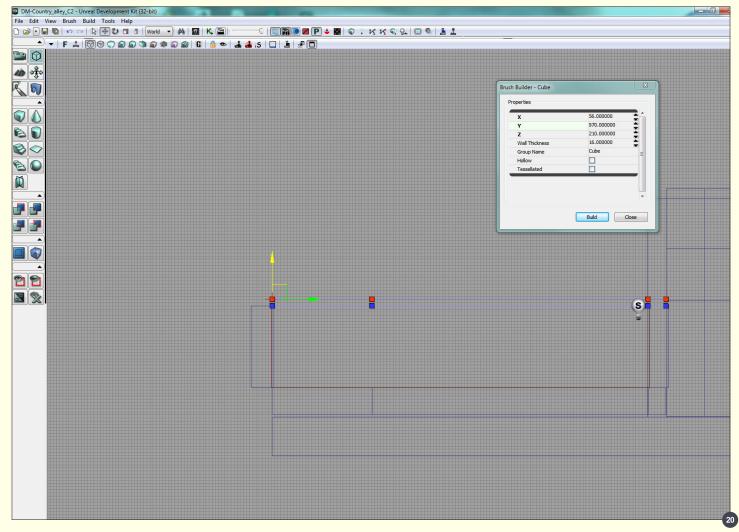




This area now needs a roof in order to close the player in and get that indoor feel (Fig.19). Select all three platforms and Alt + drag them so they sit on the walls we just made (Fig.20). The roof is a little bit thick so in Geometry Edit mode, select the top row of verts and drag them in the Z axis to get a more suitable thickness to

the roof. Re-build all lighting and geometry so you can see your changes, play the level and explore the new area (Fig.21).

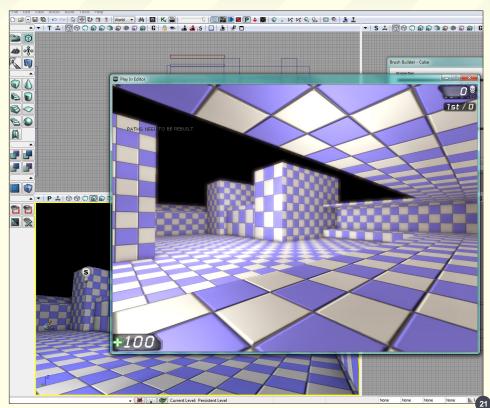
I don't like to look at the default checker pattern textures that get applied to new geometry for very long, so I always add temporary materials to get rid of the default material. This will help us to see more of what the level will look like. In order to apply textures we need to open up a new window called the Asset browser. This is located at the top of the GUI, next to the binoculars (Search) icon. With the Asset browser open you will see on the left side all the

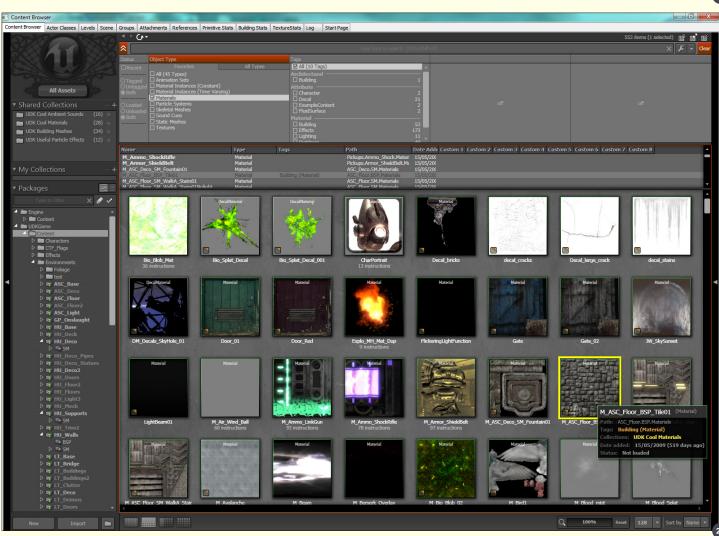


packages available for us to use in our levels. We will create our own package to save all our assets in later on in the tutorial. We will use what's available for now.

Because this library is so big we need to make our search easier. In the packages section click on Content; this will show everything that's available to us (Fig.22). Tick the Materials tick box and this will only show the materials we can use in our scene. In the Object Type section select Materials and this will filter through every asset and show us only materials. Select a suitable material for the floor. You can see in the screen shot I have selected the cobbled stones material.

With the material still selected hold Alt and click on the floor ad you should see the material you selected appear on the polys you clicked on

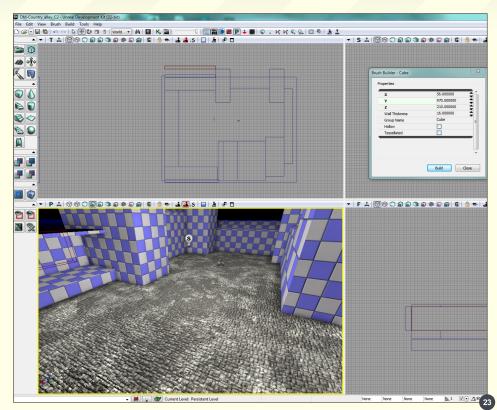


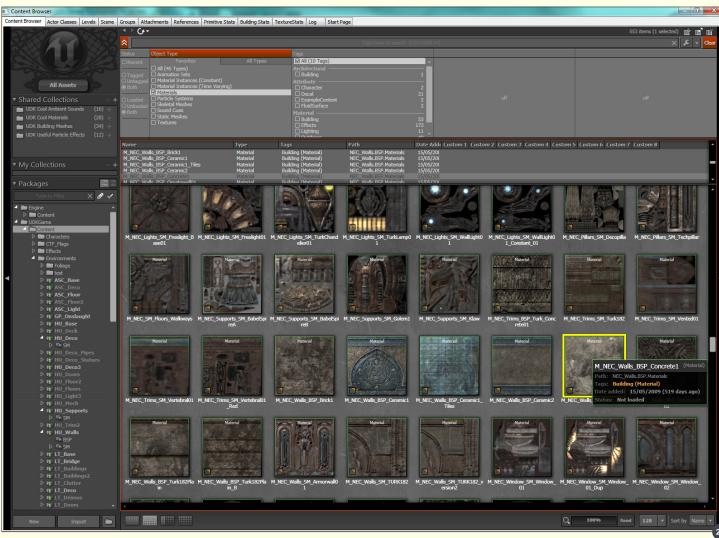


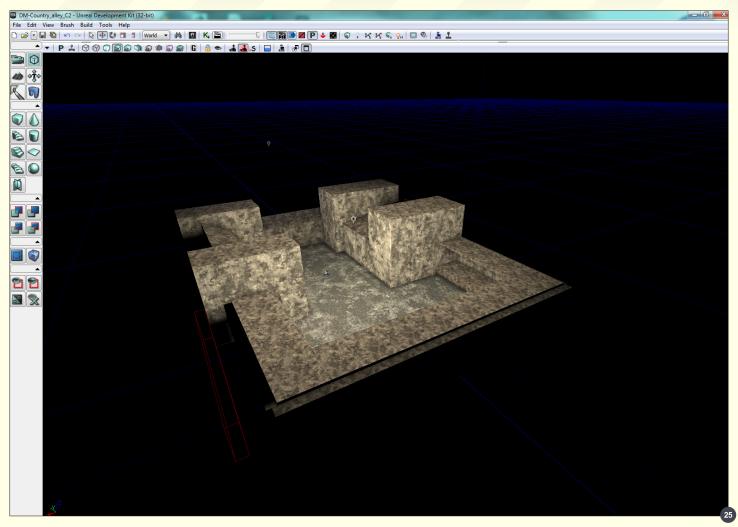
(**Fig.23**). Make sure you click on all the polys that make up the floor in order to get complete coverage.

Go back into the Asset browser and search for a suitable wall material (I found a light concrete material). Using the same method as above, apply the material to all the polys that make up the walls (Fig.24). You can also mix up the wall materials a little in order to break up the surfaces. It may get a little hard to see where you are going if all the walls are the same. Find a contrasting material and apply it to some of the walls. You don't have to be perfect here as everything is temporary.

Here is a screen shot from above to show you the entire level area, fully textured and ready for adding the details (**Fig.25**). Also play the level again, have a wander around and start to think





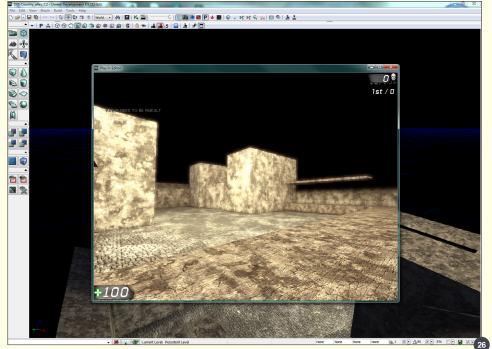


about how these spaces will be filled and what sort of assets will we need in order to finish the level (Fig.26).

Save the level as a name of your choosing and this completes this stage of the building process. The foundation has been laid and it's

time to build on that layer by layer until we have a polished, detailed level you can have in your portfolio. Save a copy of this level so it's safe and have a play around with the geometry until the next chapter is out. You will learn more from experimenting, and also think of ideas you can use in the final level.

I hope this chapter was easy to follow and, most importantly, I hope you had fun doing it. In the next chapter we will cover creating your own assets and getting them in game. I shall show this by creating a wooden gate in 3ds Max and fully texturing it. Then I'll show you the export process to get it in the game. Thanks for reading!



Andrew Finch

For more from this artist contact them at: afinchy@googlemail.com





3D CHARACTER DESIGN SERIES WITH SCOTT PATTON

In this two volume series, Scott Patton shows the processes he uses to create a 3D character for feature films. The first volume explores Patton's fast and efficient method for concept sculpting, skipping the 2D sketch phase all together and designing the character entirely within ZBrush®. He covers everything from blocking out the forms and fleshing out the muscles, to adding props, detailing with alphas and posing the character. The second volume covers methods for creating a final color rendering using ZBrush and Photoshop®. Patton shows how he squeezes the most from ZBrush's powerful renderer to create both a wide and close-up shot of the character. He then shares creative Photoshop tips and tricks to quickly get to a finished piece of concept art from the ZBrush renders, covering topics such as adding and refining skin texture, hair, eyes, shadows and scars. Patton also discusses how to create backgrounds that enhance the character and overall composition.

All Tutorials Are Now Available
As DVDs, Digital Downloads,
And Part of The Online Training Subscription

www.thegnomonworkshop.com





ZBILSh Morsier

CHARACTER CREATION

CHAPTER 3

Subterranean Monster

ZBrush is becoming more and more powerful in the world of 3D, with many artists now embracing its flexibility and hands-on approach to sculpting characters. ZBrush monsters are slowly starting to dominate the CG forums and galleries across the internet and in this six part series we have invited some ZBrush pros to show us how it's done! Each artist has been given a specific environmental condition as a starting point and has sculpted a monster based on that idea, accompanied by a step-by-step tutorial detailing the creation process from concept through to completion.

CHAPTER 1 | SEPTEMBER ISSUE 062

Mountain Monster

CHAPTER 2 | NOVEMBER ISSUE 063 Sewer Dwelling/Swamp

CHAPTER 3 | THIS ISSUE Subterranean

CHAPTER 4 | JANUARY ISSUE 065 Volcano

CHAPTER 5 | FEBRUARY ISSUE 066 Aquatic

CHAPTER 6 | MARCH ISSUE 067 Jungle

Chapter 3 -Subterranean Monster

Software used: ZBrush

INTRODUCTION

Hey there, my name's Marco and here's the tutorial on how I modelled the Land Shrimp subterranean monster. I decided to make it in ZBrush from start to finish, in order to show that ZBrush 4 now has a lot of new cool tools to assist you through the complete workflow of character modeling, from making base meshes to final renders.

There is a lot to say about digital sculpting but this tutorial will focus on the basic tools and the complete workflow in ZBrush.

1. CONCEPTUALIZATION

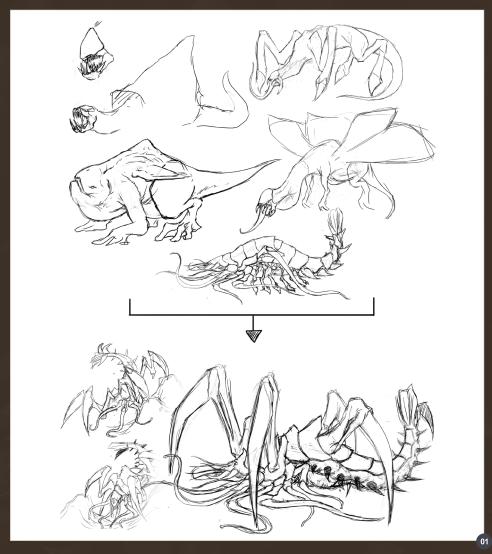
References

The best way to achieve impressive and catchy results is through good references. It is possible to accomplish great things from nothing, but people seem to react better to things they can relate too. This means that if you inspire yourself from existing images, and build an original model from a good starting point you most probably will end up with a good response. Also I find it best to look at real life references instead of other artists' work if you want to do something out of the box.

For this model, I went and checked on the internet, TV and in National Geographic magazines for typical and unusual underwater and subterranean creatures like mammals, amphibians, fish, insects, weird slimy things, etc. I wasn't sure if I wanted to do a large, small, puny, epic, disgusting or cool monster, but by looking at these references I found a direction I liked. Even if you don't stick to it, at least picking a direction gives you a starting point.

Character Background

My goal was to take an animal that we all know, but that might have evolved into a monstrous



mutant creature in an unknown underground environment. It's useful to think about this stuff while making your concept because it justifies the specs of your character and people really notice that. The same with muscle anatomy or mechanical stuff: if it doesn't seem plausible, people won't buy it.

So, for my Land Shrimp, I imagined an underground cavern only accessible by water (a bit like a big water bubble cave in the depth of the ocean) where some fish (or a shrimp!) might have grown some legs over time like pre-historical fishes/amphibians did on the land a couple of hundred thousand years ago. From there, I downloaded a lot of pictures of shrimps, lobsters, dinosaurs, insects and weird exoskeleton species and began to conceptualize its look.

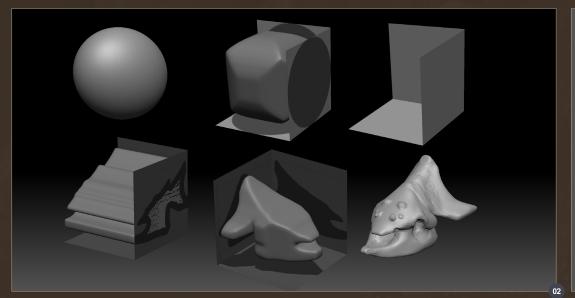
Concepts

I started by doing some very rough sketches, mainly flowing lines and scribbles, and drawing something more concrete once my mind saw something in there (like when you see cats, swans or Nazi zombies in the clouds). Also, sometimes an error leads to a better result than what you aimed for.

After I made some quick sketches, I looked at the concept and mixed what I thought was cool in each of them to give it a mutant look but without losing too much plausibility. Fig.01 shows some sketches that led to my final sketch for the concept phase and some rough poses for the final beauty shots.

Since I'm a better modeler than concept artist, I prefer to leave my sketches incomplete in order

Chapter 3: Subterranean Monster ZBRUSH MONSTER CHARACTER CREATION





to continue the concept during the first phases of the modeling in ZBrush.

Helpful tool: Alchemy

If the white page isn't inspiring and you need to find original shapes to start your concept, I strongly suggest the freeware Alchemy! It doesn't require any technical skills and it's a great way of expanding the mind.

MODELING

Creating base meshes using Shadowbox

One of the greatest additions to ZBrush 4 is the Shadowbox. It is a great way to create base meshes in an instant. In Fig.02, I took a Sphere3D from the 3D Meshes submenu and made a 3DPolymesh with it, because in the Subtool submenu, it enables the Shadowbox button. Before pressing the Shadowbox button you can choose the resolution and the smoothness of the mesh you want to generate with the Res and Polish sliders. Once the Shadowbox appeared around the sphere, I removed the sphere by using the Unmasking Selection (Ctrl + Alt+ draw a square on the canvas). Basically the Shadowbox works by painting a mask on the three planes. Each masked area will project a shadow and where all the shadows cross, it creates a mesh. You don't need to make a detailed shape at that point, just a placeholder. Once you are happy, click on the Shadowbox button again and the job is done.

It is important to keep your meshes at a low subdiv level for future steps. If you feel that the lower subdiv level is not low poly enough, you can recreate it with fewer polys. To do this hide every subtool that you don't want to recreate, and use the Re-mesh All button and the Res slider (Fig.03) to re-mesh every visible subtool into a single lower resolution subtool with the appropriate resolution. This will create a smothered mesh, but you can project it onto the old mesh using the Project All button (Fig.03) to regain its shape. The X, Y and Z toggles on the Re-mesh button will give you automatic symmetry after the re-meshing if desired (kind of like Mirror and Weld in the Subtool submenu).

I did that for every part of the model except for the little arms/legs, which use the basic ZSphere techniques. Use the Subtool Master to mirror subtools that are symmetrical.

Now it's time to sculpt!

First pass: Nailing the volumes and finishing the concept

In this pass, I subdivided the placeholders and just quickly built them towards the shape I was looking for in the concept. This helps to expand on the concept and find other cool modules or shapes. I like to use the Clay Build-up brush with a square alpha, and the Move and Move

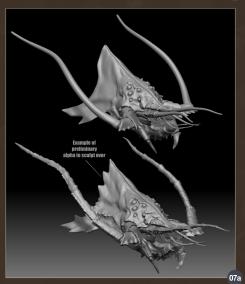


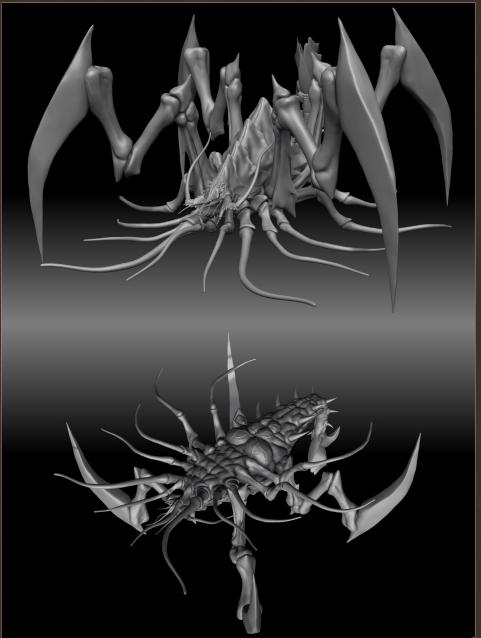
Elastic brushes for that phase. I find the Clay brushes better than the Standard brush for adding volume since they seem to flatten the surface you brush over instead of accumulating all the roundish brush strokes of the Standard brush. Using them will help you avoid the blobby look. If you want to make rounder shapes using Clay brushes, just use the Smooth brushes.

Tip: Try the Alternative Smooth brush if you want to smooth/relax the mesh without affecting its shape too much (hold Shift + start brushing + release Shift + continue brushing).

Fig.04 shows the head, claws and back being sculpted during the first pass. I used the Snakehook brush with the Move brush and a high Focal Shift to make the spikes. If, at some point, you feel like you stretched the mesh too much or completely nuked it, give the Relax slider a try and it might fix the problem without smoothing the mesh too much. Try its radio button too.







Once you've been through every subtool and you know where you are going, you can subdivide it even further and really start detailing the model: this is the second pass (Fig.05).

Second pass: Defining the surface

In this phase, we focus less on volumes and begin giving the shapes some personality. This is achieved by making shape and surface imperfections (if you are doing something organic). Keep in mind that unless it's manufactured or comes from an assembly line, almost nothing is smooth and slick. To begin removing the soft look of the first pass, you'll

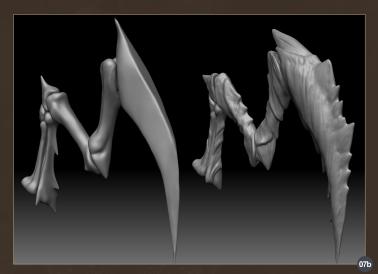
need to use different brushes to make cavities and harder edges. Fig.06 shows some useful brushes.

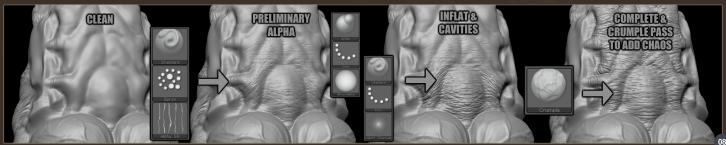
The goal here is to use the volumes built during the first pass and sculpt the surface in order to make it look like a ridged shell that has been softened by water and the humid environment. The inspiration for the look came from some references of dinosaur bones combined with the shell of a lobster and hermit crab. You can still leave some sketchy brush strokes for the look: they will be polished further in the third pass (Fig.07a – 7b).

Chapter 3: Subterranean Monster ZBRUSH MONSTER CHARACTER CREATION

Sculpting again is a useful technique if you're not sure what treatment you want to give to a surface. You do it by using an alpha and choosing the Spray Stroke (adjust the values in the Stroke Menu if desired) and then lightly spray the alpha over your surface (as seen in Fig.07a where the head is getting its second pass). Often you'll find a cool effect accidentally that you can then use as a great starting point to continue sculpting. In Fig.08 you can see what alpha I used for my draft, and how I sculpted over to obtain the final results on its belly.

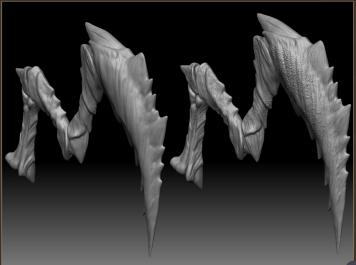
Even if this is a step-by-step, it is not an absolute: you can always come back to fix things or take a step ahead and try to add micro details to know where you're going. **Fig.09** shows the model with some subtools in their second pass and others with third pass experiments.

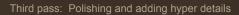












This step is an extension of the second pass since it is still about the credibility and realism of the model, but in this one the focus is on sculpting the surface texture and getting rid of the sketchiness and softness. In Fig.10, you see the kind of tools I used for this phase. Mainly, it is done by using the Standard and Clay brushes, the DragRect or Spray Strokes and most importantly, the desired alpha. If you are to use the Spray Stroke you will most probably need to play with the options in the Stroke Menu until you find a good amount of everything. There is a gray area here: don't go overkill on the surface texture! (Fig.11a - 11b).

I often use the standard alphas provided with ZBrush since then you can achieve many results by varying their treatment or the Stroke options.

Also, don't hesitate to duplicate and modify some subtools. That's what I did for the shells on its back and its little leg things: I duplicated the subtool and lowered the subdiv level until I couldn't destroy the details on the high subdiv level, and started modifying the shape with the Move brush and evened the Clay Build-up brush to change the volumes (Fig.12).





Chapter 3: Subterranean Monster ZBRUSH MONSTER CHARACTER CREATION

3. Materials and texturing

I prefer to texture my models before transposing them as it means I can still use the symmetry. You can do the materials or the texturing in the order you want because they really come together. I tend to jump between both of them.

Materials

What I usually do is take a Standard Material (just under the Matcap submenu) that has at least two shader slots available, in case I want to copy-paste a preset shader into one of its slots to mix the effect using the Shader Mixer in the Materials menu (Fig.13). If you are not using a slot, just turn it off with the radio button beside the slot number.

I start by applying the material to the desired subtool by clicking the M button in the space bar options (**Fig.14**) and then filling with the Fill Object button in the Color menu. Then I go into the Material menu and start playing with the Diffuse slider, the Diffuse Curve, Specular slider and Specular Curve until I get the results I want. The PhongBlinn slider at the bottom comes in handy too. I leave the Ambient and the rest of the options in the Modifier submenu for later.

A cool new addition to ZBrush 4 is the rapid SSS shader. I used it on the belly a little bit, just to give a little effect. To use it you need a material with at least two shader slots: copy the Fresnel Overlay shader from the Standard Material and paste it in the second shader slot, choose some bright red colors in the Modifier submenu of the second shader, then just play with the value of the SSS Slider and the S Exp slider in the Shader Mixer submenu and choose the desired Blend mode (don't forget to enable SSS in the Render menu too).

I put some transparency on the tail fins. This is done by first enabling the Transparency in the Render menu, then clicking on the third icon above the desired subtool (**Fig.15**).

I used three materials for this creature: a strong specular for the exoskeleton, a wide specular using a purple SSS effect for the belly and fins, and a variation of the Toy Plastic material for the eyes. On the same subtool, you can paint different polys with different materials by painting with the M button in the space bar options. I painted the skin joint of the claws and legs with the SSS material while the rest of the subtool is using the exoskeleton material.







I found that the best way to understand the behaviour of the material options is using the old fashioned method of testing the different options until you get the desired result. Keep in mind though that you will need to fix the materials later when adding render effects and lights, so don't spend to much time with them at this stage. And don't forget to take a break once in a while so that you don't lose your objectivity. You might run the risk of rushing through your work, and if this is the case then your work will suffer.



Before starting the polypaint, I needed to run some tests in Photoshop. I rendered the model with a gray-scaled Matcap, brought it into Photoshop and ran some tests using the Overlay Filter on a new layer. **Fig.16** shows



some tests. I found that it is vital to have a little bit of every color spread all over a character.

Not a lot of things in real life are monochromatic, except maybe manufactured stuff.

I began texturing by adding a flat dark green color and then started painting with the brush (RGB button in the space bar options). I used a Spray Stroke and a chaotic alpha to avoid seeing the brush strokes and having hard borders where the colors blend together. Once I'd given the model its main colors, I made a second pass using the second Polypaint Mode on my brush (go in the Brush Menu and move the Polypaint Mode slider in the Alpha and Texture submenu). You might want to check the other Polypaint modes too, like the Multiply Mode. I finished by coloring the bumps and cavities by using the masking options in the Masking submenu of the Tool menu. I found that the useful options are the Intensity slider, the Cavity profile and of course, the Mask By Cavity button. The Cavity profile is responsible



of masking either the bumps or the cavity of the model. Fig.17 shows an example of these steps.

Another helpful tool: Spotlight

You can also choose to start texturing by laying

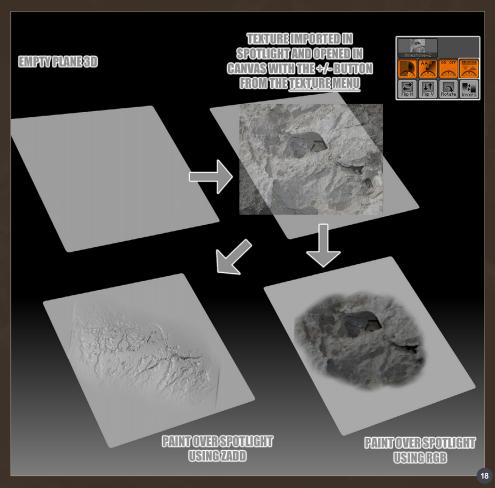
down a texture on the model using Spotlight from the Texture menu. It is a very powerful tool that allows you to project imported texture maps on the model and adjust them on the fly. By painting over the layer on the screen, Spotlight can either use the map as a diffuse map (with the RGB button enabled) or as a height map for sculpting (with the Zadd button enabled). **Fig.18** shows some examples.

4. Transpose and Environment

Transpose: Part 1

Since I made some sketches, I knew what kind of movement and flow I wanted for his pose and what shot I wanted for my main beauty shot.

To save the camera angle, I opened the Zapplink submenu in the Document menu and clicked on the Cust1 or Cust2 button. Don't forget to save the views to file here! I used Transpose Master to create a low poly version of the model in order to pose him using the Action line tools (W, E and R button on the keyboard). This is the part where you'll notice if your subtools have a respectable amount of polys in their lowest subdiv level! You don't need to finish the pose at this point: wait to have the terrain nailed down first.



Chapter 3: Subterranean Monster ZBRUSH MONSTER CHARACTER CREATION

Terrain

I copied the shrimp in top view with Shift + S and used it to as reference for the terrain. I loaded a new Shadowbox and created a rough terrain. For the sculpting and texturing, I used the same technique as the monster, but used the Polish brush to make sharper edges in some places (not too much though since it's a wet and eroded terrain). I also went crazy with Spotlight to sculpt the surface texture of the rock using a rock texture map I'd imported.

Transpose: Part 2

When the terrain was done, I finished the pose: I arranged where the claws touched the floor and I gave each arm/leg part a nice flow for my main camera angle. I didn't need to use Transpose Master for that step; I simply went subtool by subtool.

5. Lights, renders and Post-production

With the new BPR (Best Preview Render) you can produce quality renders within ZBrush. The only drawback is that the render result will really differ from the preview material and light spheres in the menus and what you see on the real-time canvas.





Lights

First you need to find a good light setting. I used a main light and two rim lights for this model (Fig.19). The intensity of each light is set at almost maximum because using the shadows in BPR makes the scene really dark. This is why the preview sphere for the light seems all blasted, to compensate for the renders. Only the main light generates Shadow and SSS (located under the Intensity Curve, Fig.19). You will notice that the Shadow submenu in the Light menu doesn't control the shadow when using BPR

Render settings

First go to the Document menu and choose the resolution you want for your render. Don't worry about making the resolution twice as large for anti-aliasing: the new BPR will make the anti-aliasing automatically (Fig.20).

The Spix (Subpixel) slider (Fig.20) is mainly to tell ZBrush what level of quality you want for the anti-aliasing and the amount of ray calculation during the rendering. Spix will take into consideration the amount of rays established in the submenus, but will multiply it depending on the level of the Spix slider. The higher the slider, the longer the render and therefore the better the quality.

In the third window of Fig.20, you'll need to enable what you want enabled in your renders.

If you disable the SSS button, the SSS will not take effect in the render even if you have some SSS materials in the Material menu.

Then you have a load of sliders in the submenus, so I'll just feed you with what you need to know. For the rest it's better for you to experiment... what a nice "do-it-yourself" tutorial you got here eh!

Make your render tests with around 10 rays. This will cut down on your render times while you get the look just right. If you feel like your shadows still suck, raise the amount in the Res slider. Vdepth and Ldepth will come in handy if you feel that the lights on the shadow parts of the model (often it'll be a rim light) have lost their intensity, because the shadow actually darkens the light even if normally the light lightens the shadow.









Each time you change a value, it'll affect every other aspect. This is why, while playing with the render setting, it'll be important to adjust the light settings and the material modifiers because everything here works in harmony, in order to achieve the best final results.

Composition outside of ZBrush

To prepare for the post-production, don't forget to click on the Create Maps button on the top of the Render menu before rendering. After the render, you'll be able to click on the five icons just below to save to file the Render, Depth map, Shadow map, AO map and the Mask.

The only treatment I applied in Photoshop was level adjustments on specific maps and putting in a background (Fig.21 - 26).

If you want to make a turntable but you feel that the renders need some adjustments, try to use the options available in the Adjustment submenu of the Render menu. You can check out my ZBrush turntable on my website at: http://www.marcoplouffe.com

CONCLUSION

That concludes ZBrush's workflow tutorial for modeling, texturing and rendering a character. I hope you learnt something! Now the only thing left is to achieve the results you see in your head, but in my opinion that only comes from

practice and experimentation. Without hours of practice and experimentation, along with the help of my teachers, classmates, friends and the many critiques I got on the forums, I wouldn't be here telling you the tricks I learnt. I owe these people a lot and I am really grateful for that!

If you wish to contact me, don't hesitate to send me an email; it'll be a pleasure to answer you in



www.3dcreativemag.com

page 65

Issue 064 December 2010





GEAT MONTH Here is what's in next months issue of 3dcreative

Tutorials

Creating the Celeritas (Spaceship)

Chapter 3 - High Poly Modeling by Djordjie Jovanovic, Luigi Terza & Tamás Gyermán

Photoshop post Effects

Chapter 1 - Fire Effect & Heat haze by Richard Tilbury

The Italian Courtyard Unreal Games Engine Tutorial

Chapter 3 - Part 1: Static textures and meshes by Andrew Finch

ZBrush Monster Character Creation

Chapter 4 - Volcano by Jesse Sandifer

Interviews

Cvetomir Georgiev

Galleries

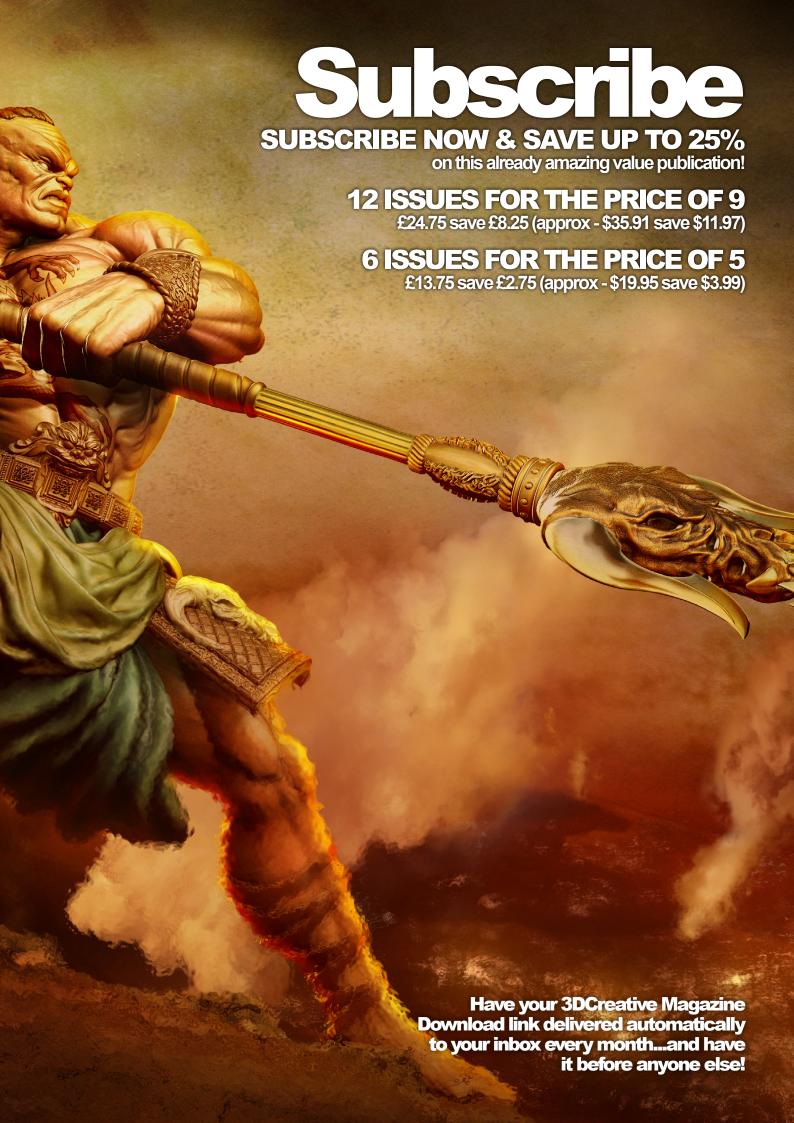
another **10 of the best**Images from around the world!

Making of's

Making of Ship by Moises Gomes

visit www.3dcreativemag.com for full information and to purchase current and previous issues for only £2.75 each!

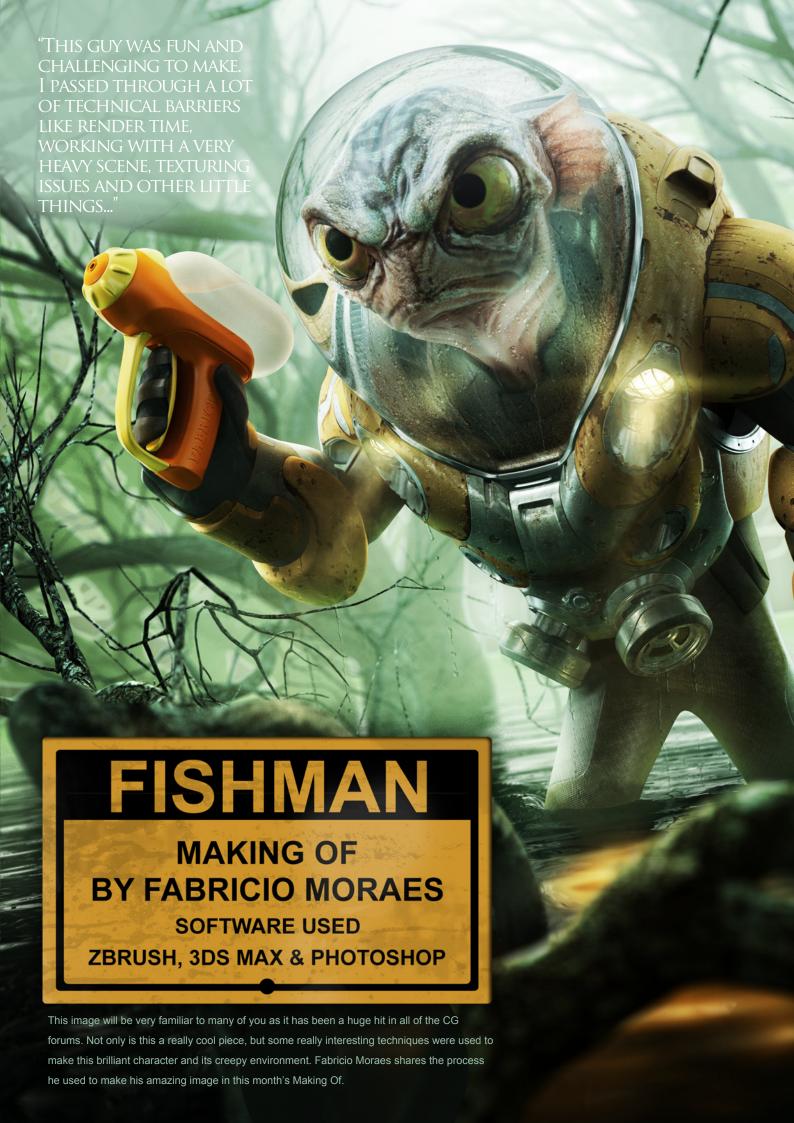
Original image by Christopher Tackett | Tutorial by Richard Tilbury





Learn Animation from the Best in the Business





FISHMAN Making Of

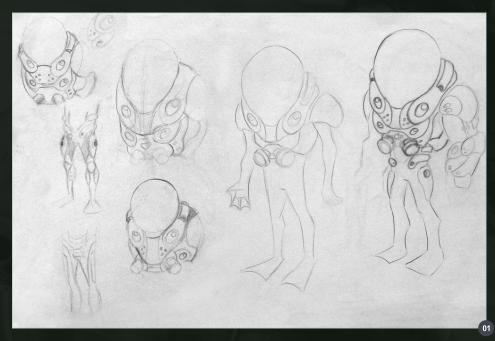
Making of Fishman

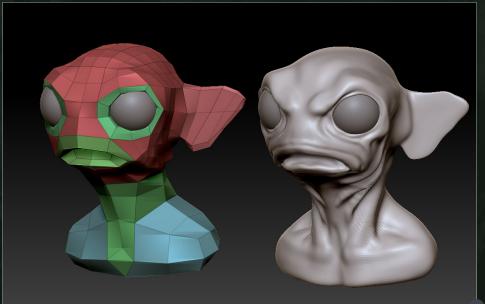
Software used: ZBrush, 3ds Max & Photoshop

INTRODUCTION

I've always loved the mariners Blizzard made for *Starcraft* and this was my main inspiration when creating this image. I also like using a realistic cartoon style, so I thought to myself: how can I mix these elements and make the image funny?

I sketched a fish-like human who needs a special suit that he wears when out of the water (Fig.01). The water pistol is to add a comical element. I wanted to make it very clean and colorful to contrast with the rest of the scene and make it more noticeable.







I started this image in 2008 and through a lack of ideas at the time I stopped working on the image until beginning of this year. Of course after two years I had a different idea and changed the concept. My work friends also gave me a lot of ideas that helped me to improve the image. I think it is essential to listen to the thoughts of others as they always have different visions that can add something to your work.

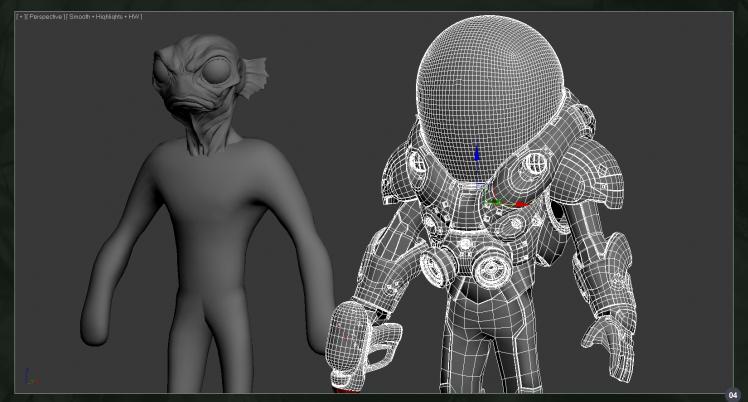
MODELING

No special techniques were used to make this image. The software I used was ZBrush to do the model and texturing. The head and body were done with standard box modeling in 3ds

Max. ZSpheres are a quick way to make base meshes, so I used them to give me an idea of the overall form of the head. With the form done I sketched some details, like gills (Fig.02).

The next step was the re-topology, so I could work with a better mesh that could be adjusted more accurately. I exported the high poly base mesh back into Max and used 3D Max Graphite Modeling tools to reconstruct a new mesh over the old one.

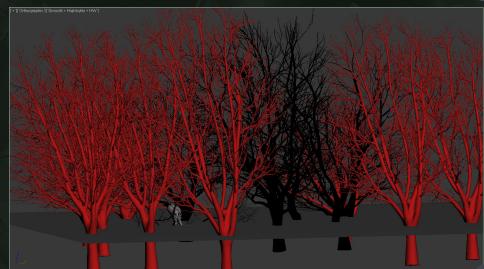
After making the UV mapping of this new mesh, I sent it back to ZBrush so I could work on the details and textures (**Fig.03**).



The armor was a little trickier because it had to be a mixture of realism and cartoon. I took a lot of references from Blizzard's mariners, but I didn't wanted the Fish Man to look as strong as them. That's why I left the arms uncovered, showing a thin silhouette.

He had a cartoony look, but it was also my intention to give him a sort of realistic appearance, so I got to work on the details of his armor. The armor needed to look functional, so I created some breathers and showed how it would be assembled if it were to really exist.





I started with a very simple base mesh for the body, to have a better idea of its proportion, and then I modeled the main parts low poly until I had the overall proportion. After that I went into the details, making the junctions and assets I mentioned before (Fig.04).

I imagined the Fish Man coming out of a swamp on a cloudy afternoon and the environment being very humid. The swamp wasn't difficult to model at all; I got some trees from Archmodels and deleted the leaves, so the hardest part of the scene model was already done. My aim was

to position all the trees the right way, so they could be seen in front of the armor and the light could pass through the trees, making natural illumination. To do this I had to put the trees all around the character (**Fig.05**).

After posing the character, I exported a plane to ZBrush to make the ripples, then exported a displacement map to use with a displace modifier in the mesh for the water (Fig.06). Before I used the displace modifier, I selected a small part close to the Fish Man to subdivide. This way I could optimize the polygon count

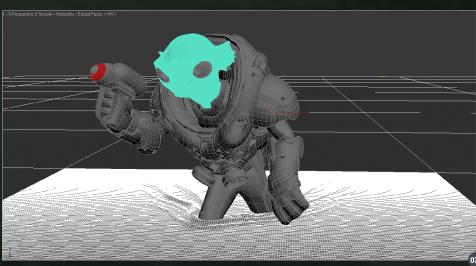
of the water, creating a heavier mesh where it needed it (Fig 07a – 7b).

TEXTURES AND SHADING

To texture the head I used the ZBrush plugin ZApp Link so I could project pieces of photos onto the ZBrush mesh using Photoshop. This was very handy since I am very familiar with the tools in Photoshop. Using this procedure is like photo manipulation over a 3D mesh. One good photo of a fish was enough to make the texture of the head (**Fig.08**).

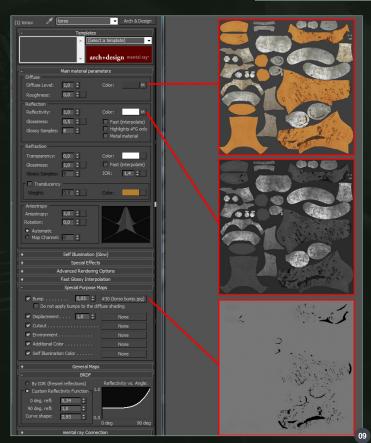
The idea with the armor was to not make it look to old; I didn't want it to look like it came from a World War II submarine. The intention was, however, to make the armor look rusted and damaged. Some photos of rusted metals, scratches and painted metals were enough to make the armor textures.

All the armor materials have mental ray arch design with glossy reflections applied. A map was applied on each material to vary the







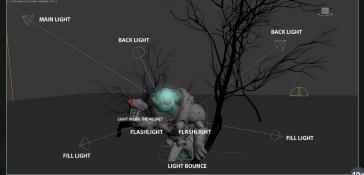


reflection intensity. Making a reflective material helps the object reflect its environment and that's why I put trees all around it, even if they're not shown in the final image. Reflecting environmental elements and lights made the character more of a part of the scene.

Here is an example of the torso material. All the rest of the armor followed the same standard (**Fig.09**). Of course all these glossy reflections meant that the rendering time was increased.

LIGHTING

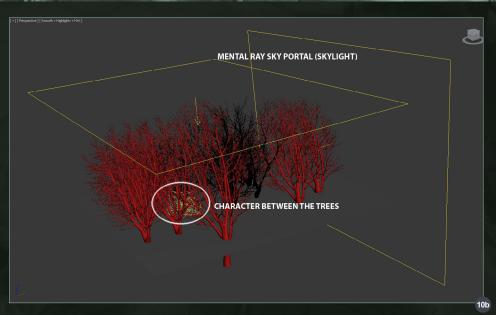
As I mentioned before, this scene is very humid and cloudy. To show this, I couldn't use direct lights or sharpened shadows. Everything had



to look smooth with soft shadows. The main light is a huge Sky Portal that covers the scene to simulate the cloudy sky. The other lights illuminated some areas on the character that were too dark and made some specular spots to help the armor looks wet (Fig.10 – 10a). All these lights meant the scene was close to the final result I wanted. I kept in mind that in Photoshop I could improve the overall look very quickly, so the most important thing at this stage was to keep the information of each rendered detail, like the reflection, specularity and volumes.

RENDER AND POST-PRODUCTION

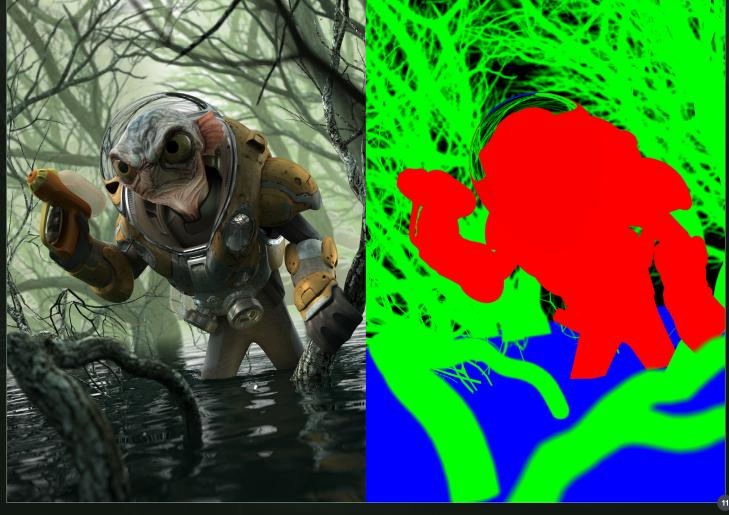
The render was the toughest part. Everything was rendered at once, including the Depth of Field. I did it that way because there were too many elements interacting with each other, like the reflection of every tree on the armor, the



reflection of the water and the DoF (which, by the way, when rendered together in the scene gives smoother transition between the planes). All these elements would be very difficult to put together in post-production without any undesired effects. To help me treat each

element separately I rendered a color mask (Fig.11).

With the render of the entire scene and a mask separating the main elements like character, helmet, gun, water and trees, I could start





the post-production. The first thing I did in Photoshop was to improve the lighting and raise the contrast, over-exposing the background and making the foreground darker. This way I could achieve a more mysterious and dramatic look to the scene (**Fig.12**).

I created an empty layer set to Overlay, which
I put over the elements I want to improve, and
painted gray tones into it to force the volumes.
I also adjusted the highlights and dark areas
of the character. After tweaking all the lights
and volumes, it was time to adjust the colors. A

15

gradient layer with desired tones set to overlay did the trick, and also made the top of the composition brighter (**Fig.13**).

I painted the fog in the background with custom brushes. With a solid brush I painted effects like the lens flare and the wide glow coming from the sky. This way I could add a foggier look (Fig.14). I couldn't get the desired wet look in 3D, so to made the armor look wet I used photos of drops of water and added a high pass filter to normalize the tones (Fig.15).

CONCLUSION

This guy was fun and challenging to make. I passed through a lot of technical barriers like render time, working with a very heavy scene, texturing issues and other little things that pushed me back.





I am satisfied with the result, and sometimes
I joke with people saying "I couldn't finish
this work before, because I had to wait for
technology to evolve". This is not entirely untrue
because my old computer couldn't handle the
render!

FABRICIO MORAES

For more from this artist visit: http://fabmoraes.cgsociety.org/gallery/

Or contact:

fab.moraes@hotmail.com









Bring life to the scenes with Craft Director Studio – it is quick to learn and easy to use.



Craft Director Studio™

Founded in 2006 and based in Gothenburg, Sweden, Craft Animations™ is a leading developer of a new era of professional real-time 3D animation technology, Craft Director Studio™.

A CRAET

Based on cutting-edge research in autonomous control systems, Craft Director Studio and its add-ons simulate the complex physical behavior of cameras and 3D vehicles such as helicopters, cars, airplanes, boats and motorcycles. Utilized by high-profile companies worldwide such as Disney, Pixar, NAMCO BANDAI, Lockheed Martin, Ford and Toyota; Craft Director Studio streamlines production, enhances realism and increases creativity for users in the visual effects, game development, forensic reconstruction and architectural design industries.

- ☑ Eliminate scripting by doing all animation inside Maya, 3ds max, Softimage and Cinema 4D.
- Ability to create massive scenes efficiently
- ☑ High end realism in real time







Craft Director Studio Complete Suite

The complete package that includes all tools available for CDS.

Annual: \$1 243

Perpetual: \$4 970 Floating: +25%

Craft Director Studio

Revolutionize the way you work and make your presentations come

Annual: \$464

Perpetual: \$1 857 Floating: +25%

Craft Director Studio

Need to visualize a vechicle or age for you.

Annual: \$461

Perpetual: \$1 844 Floating: +25%

Craft Director Studio

The complete defense package that includes all tools available for CDS plus 4 Pre-Rigged Models.

Annual: \$1 393

Perpetual: \$1 844 Floating: +25%



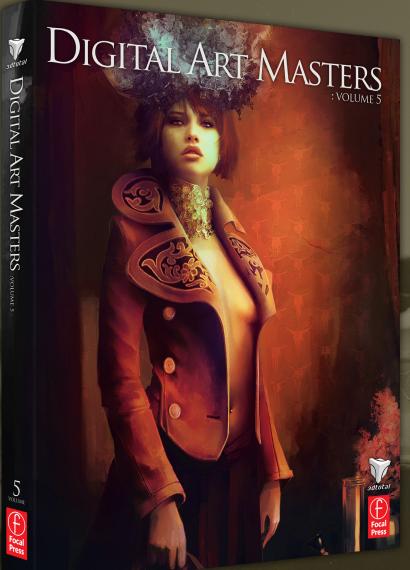








DIGITAL ART MASTERS VOLUME 5



With the release of 3DTotal's book, *Digital*Art Masters: Volume 5, we have some exclusive chapters for you...

This is more than just an artwork book.

Not only does it feature full-colour, full-page images, but each artist has given a detailed description, in their own words, of the creation process behind each piece of published artwork. And they've done it especially for this book!

This month we feature:

"Eldorado"

BY MAREK DENKO







ELDORADO

BY MAREK DENKO JOB TITLE: CEO - Noemotion s.r.o. SOFTWARE USED: 3ds Max, V-Ray, Pho



SOFTWARE USED. 3ds Max, V-Ray, Photoshop

INTRODUCTION
This image was my only personal
project during 2006. It all started when
for finished the Armous Welder project
for a Camadian studio. In one of the
form of the soft was really rine and
so I keet if to finiture reference. When I had some fee
time, I started to add some exits features such as the
and there. All the beginning I was nit really are what kind
of object would be the hot off ins shot. I considered an
oid terms ball a gold a paped of opprenties, a bottle
etc., but in the end one little toy or won.

Here is why while I was in Los Angeles in the first quarter of 2001, I bought lots of toys for my little son Alem. All those action figures from films like Allen, Precluker and Sopmen, allong with creals like Allen, Precluker and couple of smaller models, appealed to me, so I bought limm. As the months passed by I skitzed for forth detect toys in places all over the house and garden, almost clarifying the preclucion one of them and devoked to put. I thin oth its environment composed of soil. It was one of the cash bought simply because I liked it, the 1953 Codillie: Bloorado.

THERE ISN'T TOO MUCH
THAT CAN GO WRONG IF
YOU FOLLOW WHAT YOU
SEE IN THE REAL WORLD





CONCEPT & REFERENCES

The main references came from the professional client that was involved with the original project, but I also took some photos of the soil. However, as I have not been able to find them since, they aren't included in this stricle.

I'll definitely be repeating myself for the third time in the Digital Art Masters volumes by stating that I always find sourcing references an essential part of my work. So, just look, around and see how things appear. There into too much that can go wrong if you follow what you see in the real world (Fig.01a – c).

MODELING
All modeling work was done in 3ds Max 2009, with a little
from the Psylpcod pagin for the car modeling alonguide
a copyler of Max profess that if alsoche later. My usual
modeling workflow is to staff with a simple shape or
object, converting it has neithale per object, converting it has Editable Poly and using it is
most common modeling features such as Editude, Revel,
Connect, Weld, etc., The modelines is usen oft requestly
are Turbornovoth, Displace, Notes and Glymmetly. In the
following paragraphs: If describes some off the techniques
Tive used on several models in the scene.

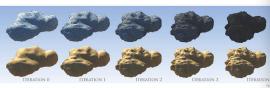
hasaks. I started by setting up planes with imageses toy or on hem: notably the top, front and side toy or on hem: notably the top, front and side to the plane of the Over this applied the Turbownooth modifier sububdivision to he mesh, followed by the sububdivision to he mesh, followed by the sububdivision of the mesh, followed by sububdivision of the plane of the plane of the plane of the plane of sububdivision of sububdi



Car wheels: Modeling the wheels was quite easy, I stanted with a cylinder containing a certain number of radial segments. I deleted most of it and then used a few Symmetry modifiers to re-create the complete wheel. I had as few control points as possible, thus enabling a feast and easy method of achieving the desired shape (Fig. 03).

Car glass: For the glass on the front of the car I again used polygonal modeling combined with the Turbormoch and Shell modifiers. When I was satisfied with the result. I created an object to subtract it from the glass. For subtracting one object for another I usually use the Probleolean compound object. After the Bootean operation had to modify the mesh and fix some of the issues caused by the operation.





Soil ground: For the soil I used a very dense plane with a lot of Turbosmooth, Noise and Displace modifiers applied. I took some time to experiment with the values and maps used for displacement in order to meet with my expectations.

Soil and rocks: I started with some primitive objects such as toxes. Then I convented it to an Editable Poly and modeled the basic shape of the soil. With the use of the Turbosmooth, Displace and triss modifiers, I selleved the desired obtain and surface quality. After achieving several roil and rock shapes, I cloned then using the Array loof and then nation/tzed their transformations suited a Rathodomzer sorp, theely available for download on the internet. When I had a nit contacted distribution used Out letter have been a decirated and the self-produced some produced some produced surface. Some of the nocks and soil objects the the propeded surface. Some of the nocks and soil objects were placed manually to achieve exactly what inceded (Fig. 50s x.).

Roots: I started with a simple line shape consisting of many vertices. I used the Noise modifier and then clone the spline several times, using the Randomizer script once again (Fig.06a – b).







Custom Rocks



If you are a beginner in 3D modeling, you should read the manual and try to find out how your 3D package works. You can trust me when I say that modeling statio chijets is one of the easier parts of 3D. If you when to be a fast, good and precise modeler, you need to know your modeling tools as well as possible, so take the time to read about them and experiment.

TEXTURING & SHADING

There wasn't too much texture work in this project. All the ground and soil objects have the same tileable textures for the Diffuse and Bump maps (Fig.07). Eldorado Isself only has a couple of very basic black and white mask textures, used to blend the car paint with the surface underneath to show the scratches.

Since I used VR-Ry for this image, I used VisyMt as a base shader for all five generative for the ear paint I used VisyBercofff to create he losyers. The first layer is the white paint with matter effections and the second is the Shelac layer with sharp reflections. To not these two materials used VisyBercofff with the additive (Shelac) layer has to be black to avoid adding more color from the paint material.

LIGHTING & RENDERING

For the mendering Listed V.Ray brom Chaograps, There are basically be officed in the scene. One is a directional light (is or light) simulating the sun, with a yellowish color. The second light (if light) is a Skylome using a V-Ray symp. I also used closel liturnation boncers to produce a more realistic result. The image was rendered us 5000 x 315 leste to an OpenEEV for Germat. The scene was really intensive and that to use Dynamic BSP in VR yet onable not render the whole image at once. It contains around 1.5 billion polygons, which I guess is immersement around 1.5 billion polygons, which I guess is immersement around 1.5 billion polygons, which I guess is immersement around 1.5 billion polygons, which I guess is immersement around 1.5 billion polygons, which I guess is immersement around 1.5 billion polygons, which I guess is immersement around 1.5 billion polygons, which I guess is immersement around 1.5 billion polygons, which I guess is more expended around 1.5 billion polygons, which I guess is immersement around 1.5 billion polygons, which I guess is immersement around 1.5 billion polygons, which I guess is immersement around 1.5 billion polygons, which I guess is immersement around 1.5 billion polygons, which I guess is immersement around 1.5 billion polygons, which I guess is immersement around 1.5 billion polygons, which I guess is immersement around 1.5 billion polygons, which I guess is immersement around 1.5 billion polygons, which I guess is immersement around 1.5 billion polygons, which I guess is immersement around 1.5 billion polygons, which I guess is immersement around 1.5 billion polygons, which I guess is immersement around 1.5 billion polygons, which I guess is immersement around 1.5 billion polygons, which I guess is immersement around 1.5 billion polygons, which I guess is immersement around 1.5 billion polygons, which I guess is immersement around 1.5 billion polygons in the I guess is immersement around 1.5 billion polygons in the I guess is immersement around 1.5 billion polygons in





RANDOM SPLINE BASED ROOTS

tote: Dynamic BSP's trick is that it stores all instanced objects to memory once only nd for the remaining instances only takes transformation information, which utilizes a

POST-PRODUCTION

For post-production I usually use Adobe Photoshop and Eyeon Fusion. I did some oc correction in Photoshop and then moved to Fusion to add some extra effects such as Chromatic aberration. All of this was done in 16-bit per channel color depth to protect the color information as much as nossible.

CONCLUSION

So that is, it, it was not really hard to make this piece. The most difficult part was to find the will and time to complete it. Deliver that if you have read at of this them you will understand some of my techniques and how! work. I'm not soying that my way is the only way or indeed the correct way. This was just a fun personal project does no in my fer time. Of which I have less and less each year. It is dedicated to my wite Barbora and to my lovely kind. Softiam and hardes. I love you.

ARTIST PORTFOLIO



TES



3DTOTAL BOOKS SAVE UP TO 20%

FOR BUNDLE BUYS

2 BOOKS - 10%

3 BOOKS- 15%

4+ BOOKS - 20%

DIGITAL ART MASTERS

:VOLUME 5

fifth edition now, and can easily be considered one of the best showcases of digital artwork available today. The quality of the artworks, the fine printing and the valuable walkthroughs make this book a must-have for any art lover and for any CG artist, professional or beginner.

Alessandro Baldasseroni | www.eklettica.com

AVAILABLE NOW

View the entire
Digital Art Masters: Volume 5 book online at
www.3dtotal.com/digitalartmasters_v5



Following on from the success of our first four books, we received yet another overwhelming response to our call for submissions for Digital Art Masters: Volume 5. Once again over 1,100 submissions made their way into the Digital Art Masters mailbox, proving to us that the series is becoming ever more popular with not only our readers, but artists around the world too!

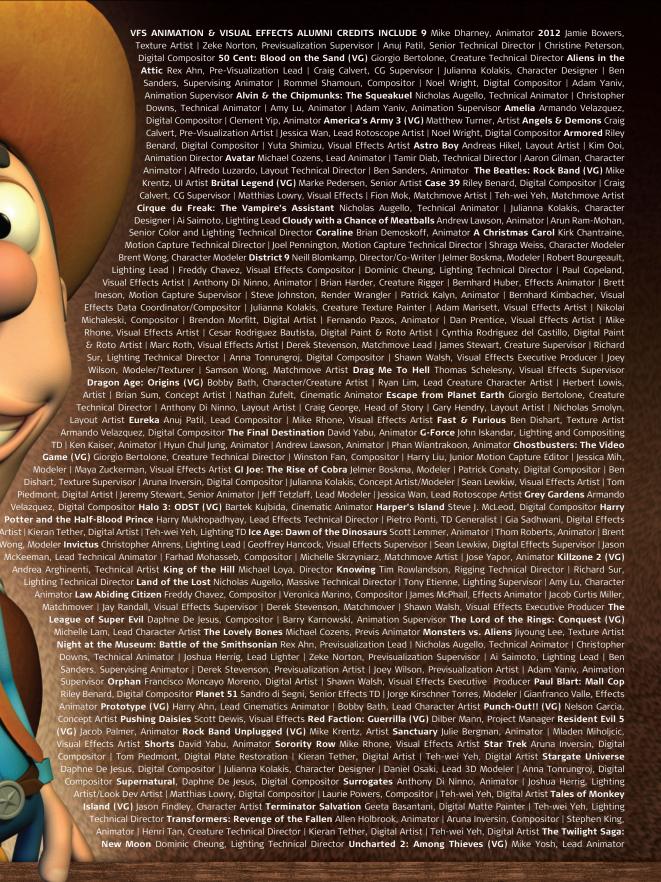
From this massive number of incredible entries, the 3DTotal team began the difficult task of choosing approximately 300 images to take through to the next round. To help in the task, we enlisted the help of industry professionals Tim Warnock (matte painter), Till Nowak (3D artist) and John Kearney and Chung Wong (videogame artists - VooFoo Studios) to be our guest judges. These wonderful artists braved the headaches of a grueling judging process and helped the 3DTotal team to select the 50 stunning images that appear in this year's fantastic line-up.

Hardback - 21.6cm x 27.9cm | 304 Full Colour Premium Paper Pages | ISBN: 978-0-240-52171-8



Visit 3DTotal.com to see our full range Book products

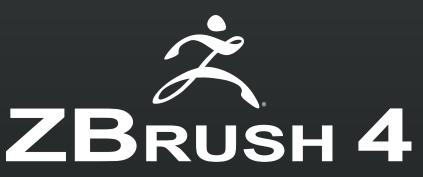




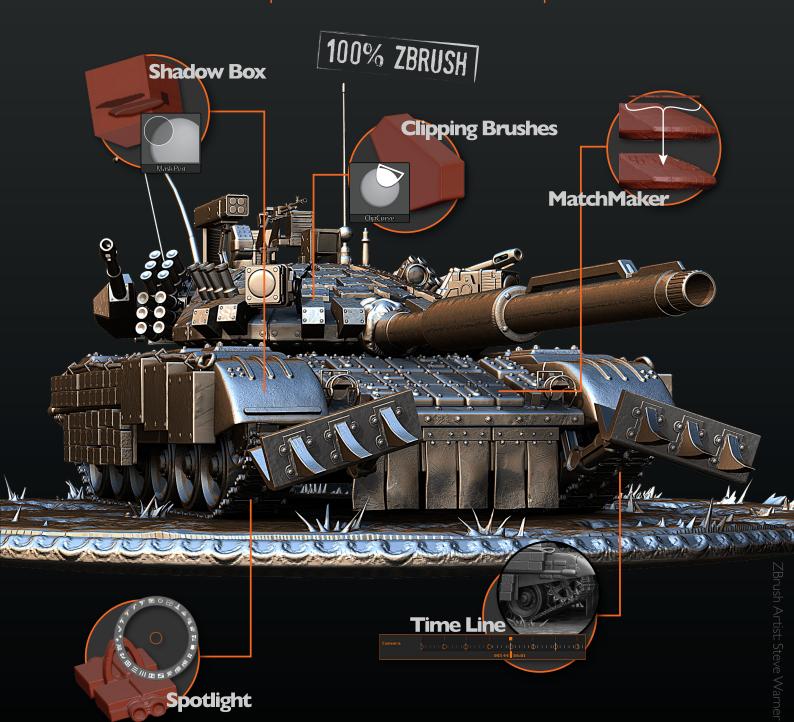
3d animation & visual effects | classical animation | digital character animation | Vancouver Film School. vfs.com/animationvfx

Underworld: Rise of the Lycans Pearl Hsu, 3D Artist | Lon Molnar, Visual Effects Production Executive Up Bill Watral, Visual Effects Artist Warhammer 40,000: Dawn of War II (VG) Ian Cumming, Senior Artist | Allan Dilks, Artist | Nathan Hocken, Lead Animator | Christine Hubbard, Artist | Claire Roberts, Artist | Jefferson Takahashi, Artist Watchmen Ori Ben-Shabat, Compositor Jelmer Boskma, Previs Modeler | Freddy Chavez, Compositor | Dominic Cheung, 3D Artist | Ben Dishart, Texture Artist | Ty Duperron, Modeler | Pearl Hsu, 3D Artist | Bernhard Kimbacher, Digital Artist | Sean Lewkiw, Technical Head of 3D | Matthias Lowry, Digital Compositor | James McPhail, Digital Effects Artist | Jacob Curtis Miller, Digital Artist | Lon Molnar, Visual Effects Supervisor | Harry Mukhopadhyay, Lead Effects TD | Cynthia Rodriguez del Castillo, Digital Artist | Derek Stevenson, Matchmove Artist | Shawn Walsh, Visual Effects Supervisor | Samson Wong, Compositor Wheelman (VG) Laura Gorrie, Senior Animator Whiteout Armando Velazquez, Digital Compositor | Clement Yip, Animator Wolfenstein (VG) Jason Martin, Modeler X-Men Origins: Wolverine Geeta Basantani, Digital Matte Painter | Rommel Shamoun, Compositor | Jeremy Stewart, Previs Artist Zombieland Mike Rhone, Visual Effects Artist to name a few

VFS student work by Thiago Martins



Conceptualize. Create. Complete.



View additional new features at www.Pixologic.com





CELERITAS

SPACESHIP MODELING & TEXTURING





CHAPTER 2 | THIS ISSUE

Modeling the Low-Poly Version

Modeling the High-Poly Version

CHAPTER 4 | FEBRUARY ISSUE 066

Mapping and Unwrapping

Texturing

CHAPTER 2 - MODELING THE LOW-POLY VERSION

In this fascinating tutorial series our artists will be guiding us through the creation of a complete spaceship in a scene, from beginning to end. We begin the series in Photoshop, using some of its excellent features to help create a concept, a vital process for anyone hoping to come up with an original design. That design is then passed on to our team of modelers who cover the stages of low and high poly modeling, texturing and post-production. This series is filled with tips to help during all of the stages leading up to the creation of an amazing sci-fi scene with an original spaceship.



Creating The Celeritas Chapter 2 - Modeling The Low-Poly Version

Software used: 3ds Max

Let's start by setting up the blueprints inside 3ds Max. Create a simple Plane (Fig.01).

Open the Material Editor by hitting the M key. I use V-Ray as default renderer in 3ds Max so my material slots are populated with standard VRayMtl (Fig.02).

If you're using Scanline, mental ray or some other renderer, just pick a Standard material and add a blueprint image to the Diffuse slot. To do this hit a blank gray square next to Diffuse and select a Material/Map Browser > Bitmap. Then browse the directory and select the desired image. Now assign the material to your plane by hitting the Assign Material to Selection button (Fig.03).

Hit the Show Standard map in Viewport button so that you can see the image in the viewport, next click on the View Image button in the Material Editor. A window with an image will pop up. Right clicking on the image will show you image details such as Width and Height. Enter these values back into your plane parameters so that proportion of the plane fits the proportion of the image.

Repeat this process for all the other planes - in our case five in total (Fig.04).

Arrange the planes so that they correspond to a desired Orthographic viewport. Go to a viewport and configure the options and check Default Lights, 2 Lights and All Viewports. This way you can be sure that you can see the planes properly from all sides. You also may want to add these planes to a separate layer so that you can easily turn them on or off. To do that go to Tools > Manage Layers > Create New Layer. When you have the selected planes hit the +

Fig 01

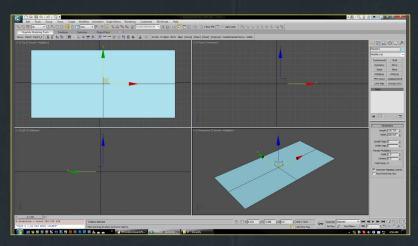


Fig 02

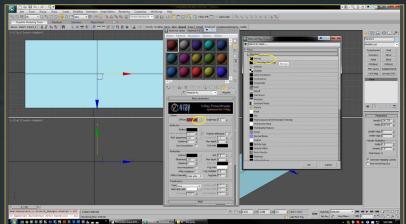
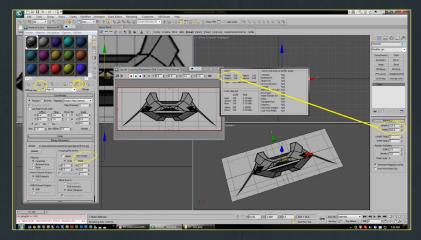
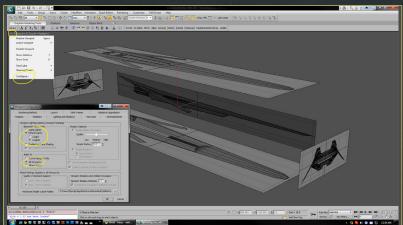


Fig 03







Chapter 2 - Modeling the Low-Poly Version | Spaceship CREATING THE CELERITAS

(Add Selected Objects to Highlighted Layer) button and you can now easily hide or freeze the planes.

NOTE: You also might want to make sure that you can display textures at their highest resolutions inside 3ds Max's viewport. Go to Customize > Preferences and choose Viewports > Configure Driver and check Match Bitmap Size as Closely as Possible.

On to modeling! The goal here is to make basic shapes fit our blueprints (**Fig.05**).

We need to pay attention to the overall shapes and proportion and once we have these right we can move on to refining the shapes, and adding all the details that will make a final product. We'll start by creating a plane. In the Parameters (Command Panel > Modify) rollout set the Length and Width segments for the plane to 1. Than convert the plane to Editable Poly by right clicking and choosing Convert to: > Convert to Editable Poly from the quad menu.

NOTE: I can't stress enough the importance of setting up and knowing your own keyboard shortcuts. Doing so will increase your speed/ productivity and joy when modeling. You should set up all the operations that you use a lot to a custom shortcut, in ways that are logical to you and that fit your needs. The easiest way to do this is to just start modeling and as soon as you find yourself doing the same operation a lot of times by going through menus or panels – set it to a key. In time you'll have all you need in shortcuts and modeling will become joy.

Since this ship is very long and big in scale, we will divide it into smaller parts to help with manipulation (**Fig.06**).

Select the poly plane, go to Vertex sub-object mode (by hitting 1 on a keyboard) and start pulling the verts so that they fit our blueprints.

NOTE: You can use the Alt + X shortcut key

Fig 05

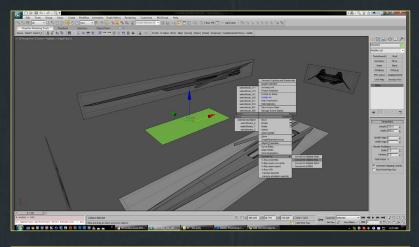


Fig 06

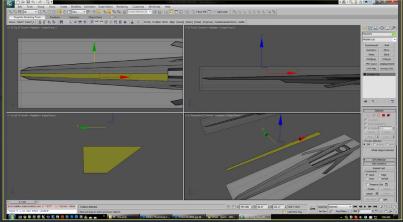
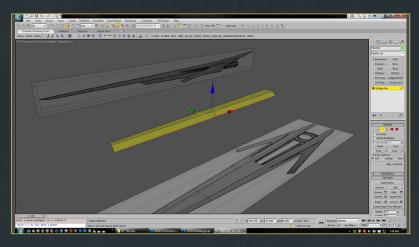
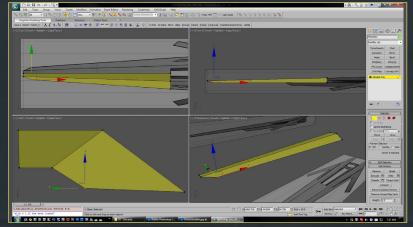
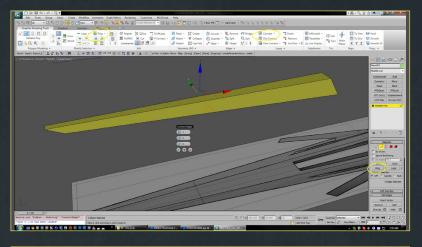


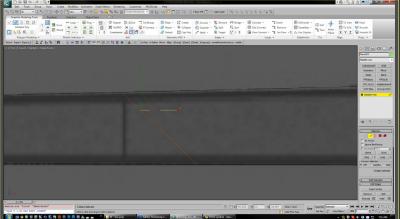
Fig 07

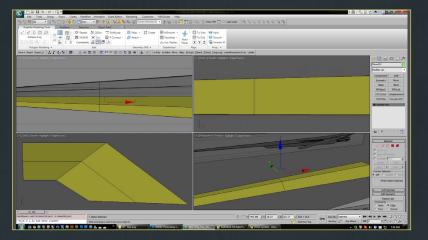




3dcreative







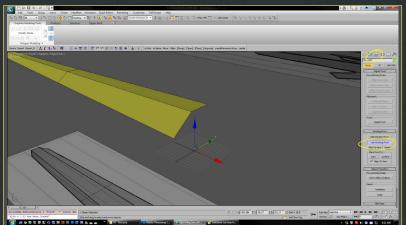


Fig 09

to toggle See-Through views of your selected object. See-Through is very helpful because a lot of the time you want to be able to see your blueprints because the geometry that you're working on is blocking the view.

Go to Edge sub-object mode (by hitting 2 on a keyboard). Select an edge and hold down the Shift key to use the Move tool to drag out a new poly from that edge (**Fig.07**).

Fig 10

Go to Vertex sub-object mode and adjust the position of the verts to fit our blueprints (Fig.08). Don't forget to check Geometry Alignment in all views.

NOTE: Since we're making an imaginary object you don't have to be too strict in following me. Feel free to play around with the form and tweak it the way you like it.

Fig 10a

Go to Edge sub-object mode. Select one of the longer edges and hit the Ring button in the Ribbon or Command Panel (Fig.09). By doing this you will automatically select all the edges parallel to the one you had selected. I recommend assigning this operation to a shortcut key because you'll be using it a lot. With edge ring selected click on the Connect button (on the Ribbon) while holding down the Shift key. This way you'll get a floating caddy with all the options for selected operations. Set the segments to 1 and hit the OK button to confirm.

Fig 11

Select the edges that we just created, hit the Constrain to Edge button on the Ribbon and, using the scale in X axis, straighten out these edges to make a perfect straight line to match the blueprints (Fig.10). When you activate Constrain to Edge you can move sub-objects along nearby edges. This is very handy when you want to move a set of edges, for example, without changing the shape of an object.

Since the ship that we are building is symmetrical on one axis it is easier and more



Chapter 2 - Modeling the Low-Poly Version | Spaceship CREATING THE CELERITAS

accurate to just build one half of it and mirror the other (Fig.11 – 11a). To do that we need to have a pivot set to a point at the center of the object (whole ship). Now there are a lot of ways to manipulate the pivot in Max. The easiest way to do this (in this situation) is to go to Command > Hierarchy and push the Use Working Pivot button. This will put the pivot to 0,0,0. Next, go to Tool > Mirror (in the main menu) and select Instance for the clone and desired axis (this may vary from user to user). You now have the mirrored object which is instanced – meaning that everything you do on the one object will be automatically transferred to the second. Don't forget to turn off the Use Working Pivot button.

Using these few techniques, continue to build up the shape until you have something like this (Fig.12).

You can use the Cut tool to add extra edges on existing polygons by cutting them. Now, using Cut, Connect, Extrude Edge, some deleting and moving vertices, create a shape that looks like this (Fig.13 – 13a).

Fig 11a

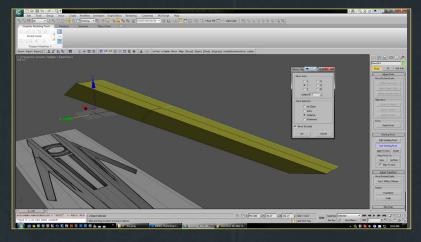


Fig 12

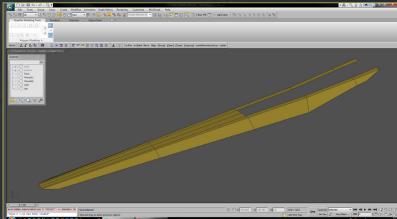


Fig 13

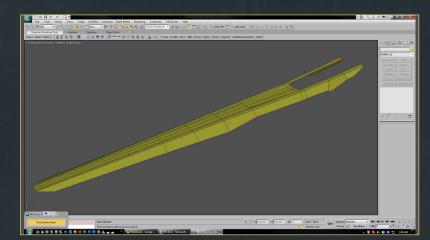
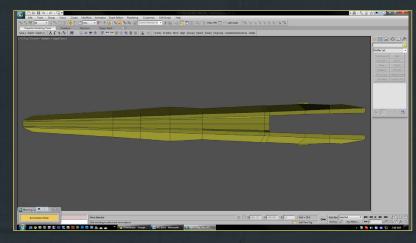


Fig 13a



3dcreative

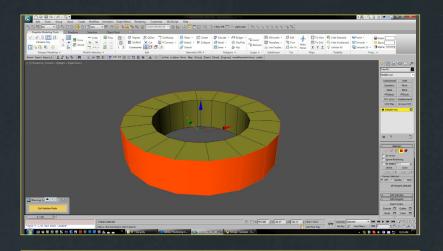


Fig 14

Create a Tube primitive. Set the Height
Segments to 1 and Sides to 16. Using the
blueprint set the Radius and Height values until
they roughly fit. Convert the tube to Editable
Poly. Go to Polygon sub-object mode (by hitting
4 on a keyboard). Select one of the outer side
polygons and while holding down the Shift key,

select another one right next to it. This way you'll have the whole loop of polygons selected. Delete the selected polygons (Fig.14 – 14b).

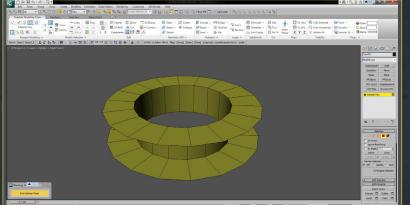


Fig 14a

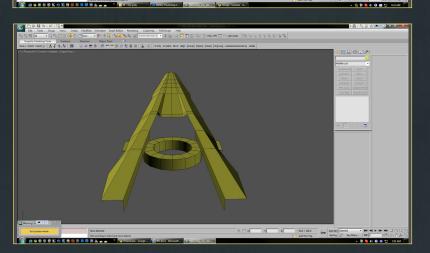


Fig 14b

Fig 15



Now let's play a bit with this object. Using the selection methods that I mentioned before and the Extrude Edge command, build up the shape like the one you see in the image (Fig.15 – 15b).



Fig 15a

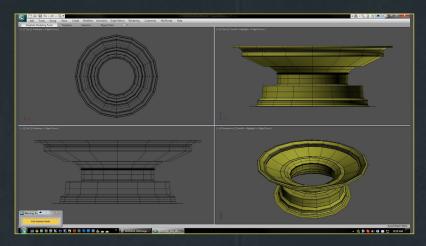
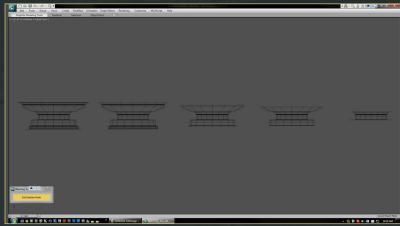


Fig 15b



Using the blueprints as a guide, create a base shape for the wing (Fig.16 - 16a). You can start with a Plane. Set the Length and Width segments to 1. Using Extrude Edge, Connect, some vertex moving and poly deleting, create a shape like the one in the image. The easy way to add some thickness to the wing is by using the Shell modifier. With your wing selected go to Command Panel > Modify and add a Shell modifier from the Modifier List dropdown menu. The Shell modifier "solidifies" or gives thickness to an object by adding an extra set of faces, and connects the inner and outer surfaces with a new loop of faces. Also you can play around with the Inner/Outer Amount in the Parameters rollout to achieve a desired thickness.

Fig 16

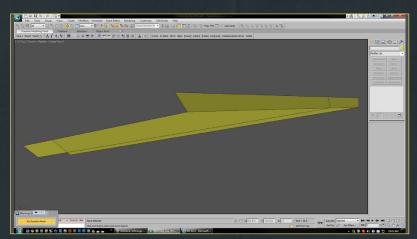
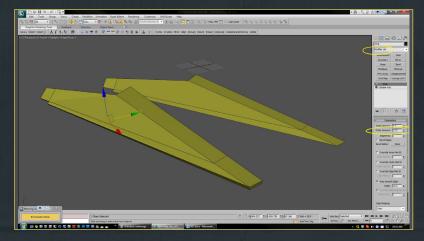


Fig 16a



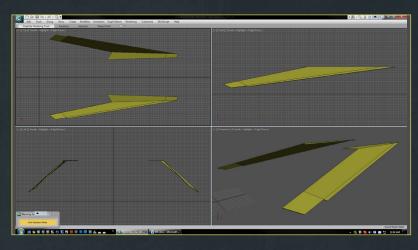


Fig 17

Use the Working Pivot and Mirror commands to create an Instance of the wing (Fig.17 – 17b).

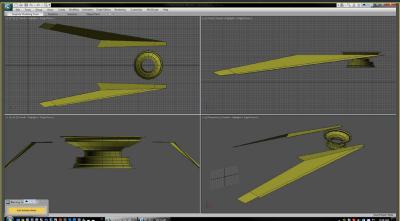


Fig 17a

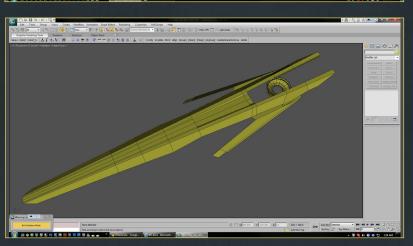
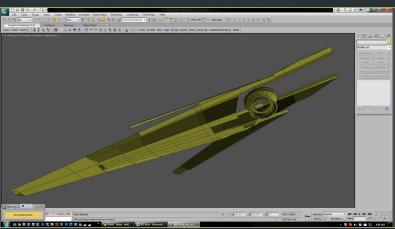


Fig 17b

Fig 18



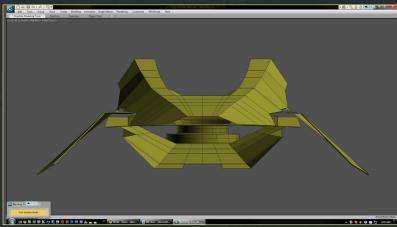
Using the techniques that we covered so far, create the bottom part of the ship (**Fig.18** – **18b**). Again, you don't have to follow me exactly. The goal here is to get comfortable with the set of tools we've covered so far and, of course, to have fun!



Fig 18a



Fig 18b



Create a Tube. Make its inner radius fit the bottom part of the circular object we created earlier (Fig.19 – 19a). Delete all the polygons except those few that you see in the image.

Fig 19

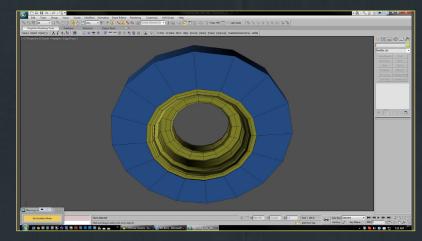
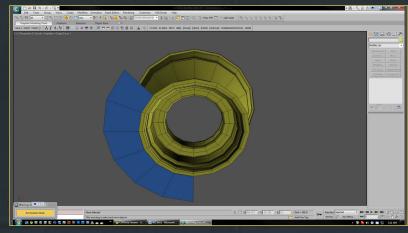


Fig 19a



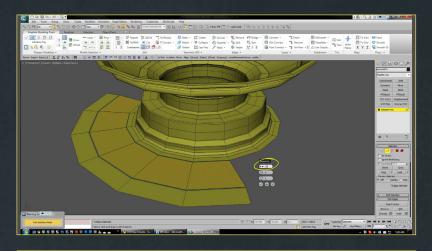


Fig 20

Select Edge Ring, as you see in the image, and use Connect to add 10 more segments. Select every second polygon loop and Extrude them a

bit (Fig.20 - 20b).

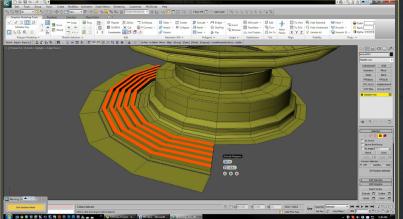


Fig 20a

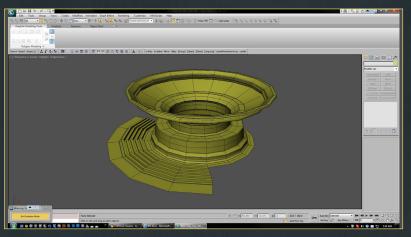
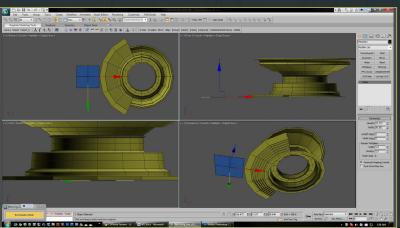


Fig 20b

Fig 21

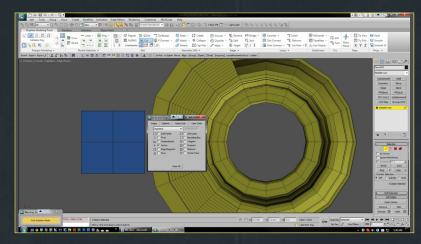


Create a plane with the Length and Width Segments set to 2. Convert it to Poly. Turn on the Snaps by hitting the S key on your keyboard. Right click on the Snaps Toggle button in the main toolbar. A window will appear showing all the snap options. Make sure that only Vertex is checked. Close the snap settings. Snaps will help you when cutting the object (Fig.21 – 21a).



Fig 21a

Fig 22



Now using the Cut tool (in Edge sub-object mode) cut the plane like this (Fig.22 – 22a). Turn off Snaps. Select the vertex in the center of the object and Shift + click on the Chamfer button on the Ribbon. Adjust the Vertex Chamfer amount until you have something like you see in the image. This is an easy way to create a circular shape inside a rectangular object.

NOTE: You can also use Chamfer on the edges.

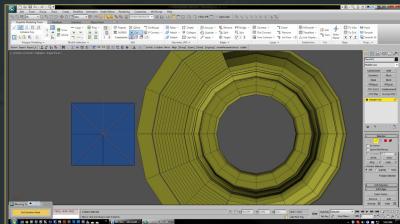
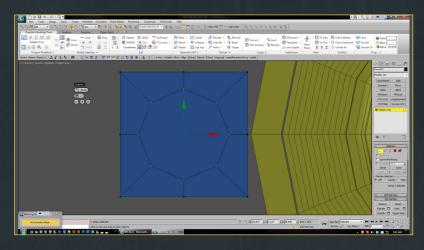
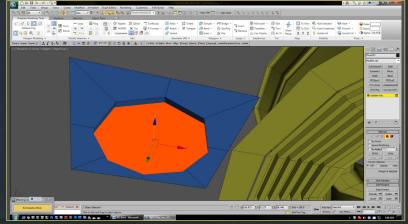


Fig 22a



Select the round face in the middle and Extrude it. Using Snaps and the Cut tool, create an object like this (**Fig.23 – 23a**).



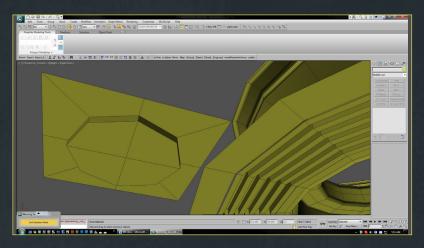


Fig 23a

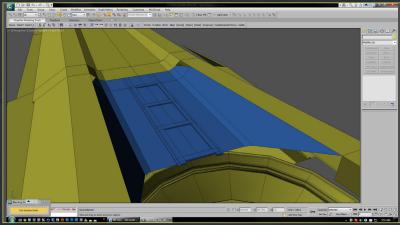


Fig 24 Using the tools and techniques that we have covered so farm create an object like the one on the image (Fig.24 – 24b).

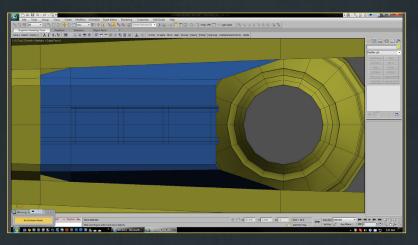


Fig 24a

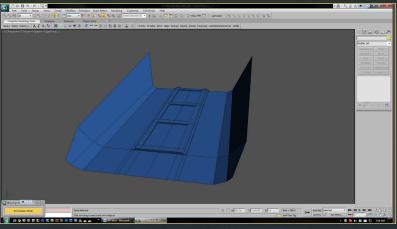


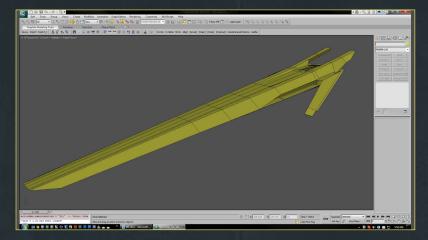
Fig 24b



Chapter 2 - Modeling the Low-Poly Version | Spaceship CREATING THE CELERITAS

Ok this is what we have for now. We created a pretty basic shape that defines the overall proportions and character of our ship. In the next chapter we'll move on to refining these shapes, making them much more complex and adding a ton of extra details to make this ship a really interesting peace of geometry (**Fig.25a** – **25e**).

Fig 25



DJORDJIE JOVANOVIC

For more from this artist visit:

http://djordjejovanovic.com/blog/

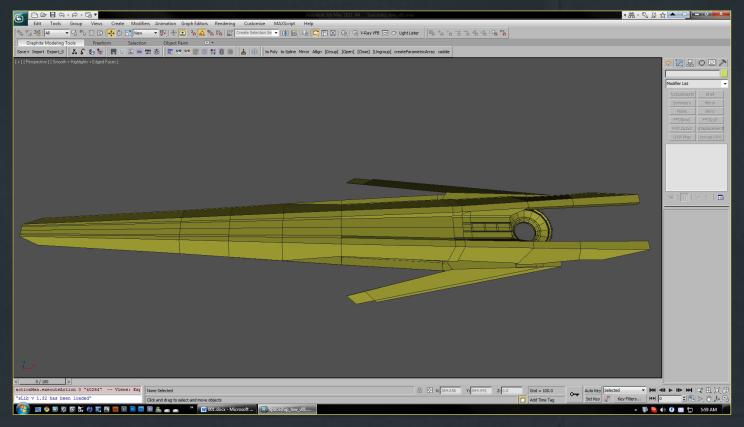
Or contact:

djordjexyz@gmail.com

Fig 25a



Fig 25b





3dcreative

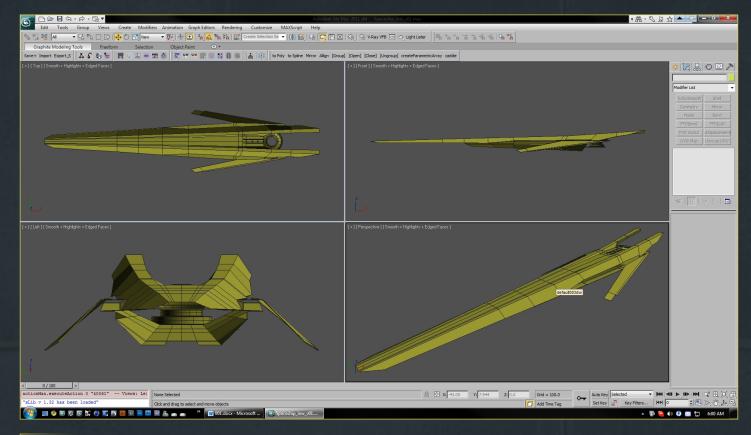
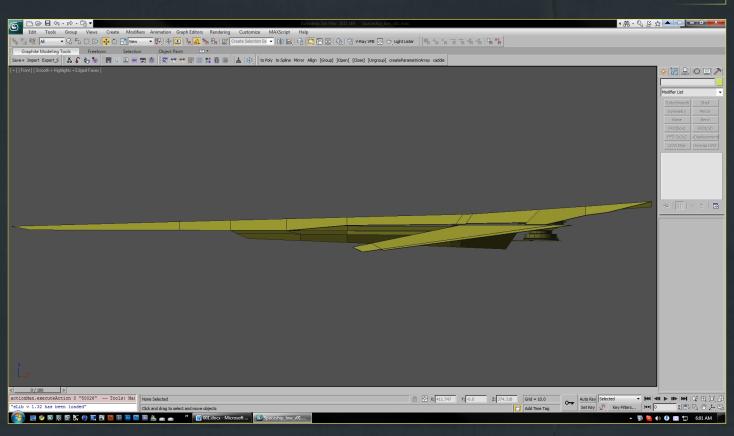


Fig 25c

Fig 25d



CREATING THE

CELERITAS

SPACESHIP MODELING & TEXTURING





CHAPTER 1 | NOVEMBER ISSUE 063

CHAPTER 2 | THIS ISSUE

Modeling the Low-Poly Version

Chapter 3 | January Issue 065

Modeling the High-Poly Version

CHAPTER 4 | FEBRUARY ISSUE 066

Mapping and Unwrapping

CHAPTER 5 | MARCH ISSUE 067

Texturing

Chapter 2 - Modeling the Low-Poly Version

In this fascinating tutorial series our artists will be guiding us through the creation of a complete spaceship in a scene, from beginning to end. We begin the series in Photoshop, using some of its excellent features to help create a concept, a vital process for anyone hoping to come up with an original design. That design is then passed on to our team of modelers who cover the stages of low and high poly modeling, texturing and post-production. This series is filled with tips to help during all of the stages leading up to the creation of an amazing sci-fi scene with an original spaceship.



Creating The Celeritas Chapter 2 - Modeling The Low-Poly Version

Software used: Maya

PRE-FLIGHT

Open a new document: File > Project > New.

In the dialogue box at the bottom of the window choose Use Defaults, and then Accept. All the commands you'll give can be found in the hotbox that's activated by holding the spacebar.

SET UP THE VIEWS

The first step before modeling is to import the views into the scene, in order to have a reference for the proportions of the model. Open the blueprint in Photoshop and split it into five images: top, bottom, front, back, and side.

The general rules about the size of the images are as follows (**Fig.01**):

- Top and bottom must have the same dimensions.
- Front and back must have the same dimensions.
- Sides must have the same length as top/ bottom and the same height as front/back.

The guidelines designed in the image will help you to create the different views more precisely.

Save all your views in the directory you have created in the folder "Source Images" (Maya will search them automatically in that folder, even if you move your entire project. If it didn't do that you would have to re-link them).

Once you've cut your images choose the side view by clicking on Panels > Orthographic > Side in the toolbar just over the perspective view (Fig.02).

Then import the side image by clicking View > Image Plane > Import Image in the same toolbar (Fig.03). Fig 01

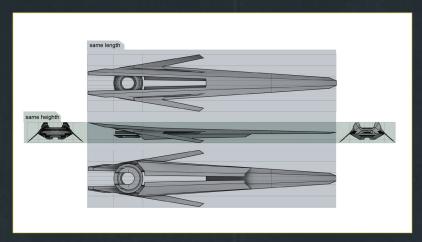


Fig 02

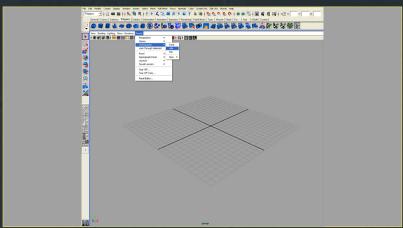
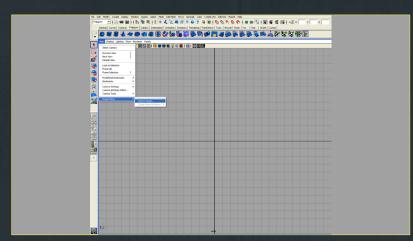
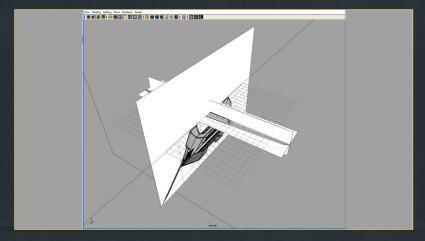


Fig 03





Chapter 2 - Modeling the Low-Poly Version | Spaceship CREATING THE CELERITAS

Do the same for the top and front. You'll notice that the planes have different proportions (Fig.04). We have to change the image plane's attributes in the Attribute Editor.

NOTE: You can select the objects on the stage by using the outliner: Window > Outliner that provides you a synoptic view of the elements standing in the scene. By double clicking one of the cameras in the outliner, the Attribute window on the right will open automatically. Otherwise you can click on an object and press Ctrl + A.

Once you have opened the camera's Attribute Editor, select the Image Plane's tab from the top series of tabs (**Fig.05**).

Scroll down to the Placement Extras tab and change the Width and Height values from 30 (the default value) to those reported in the Coverage X and Coverage Y tabs. Now the image will appear bigger, because you have set it at its original scale.

NOTE: By using the background images provided we are working in a scale that is bigger than Maya's default. This means that while zooming out of the perspective view, the images will appear cropped at a certain point. Of course you may change the image's dimensions, but if you want to work on a bigger scale you can change the Far Clip Plane value in the camera Attribute Editor from the default value to a bigger number, try 100,000. This way the camera won't crop the planes anymore.

Do the same with the top and front view and with the respective cameras. Now the last fix you'll have to do is change the image plane's position in order to obtain a box shape. The value to change is Center, which is in the camera Placement Extras attributes. These are the values I've used (Fig.06).

Set up the last two views. Since there aren't a back and a bottom view in Maya's defaults we'll have to create them by clicking on Panels

Fig 05

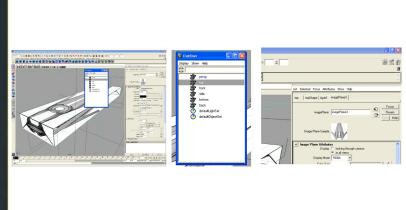


Fig 06

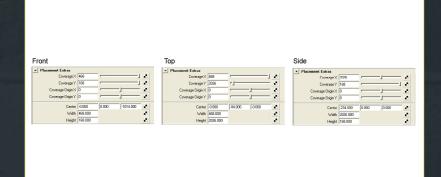
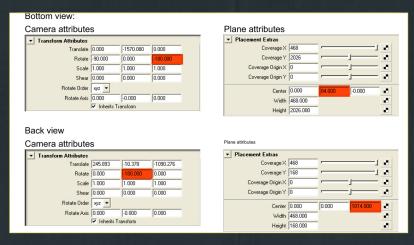
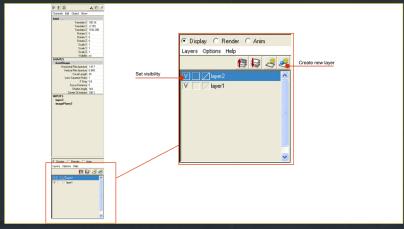
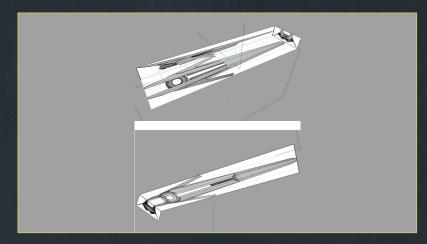


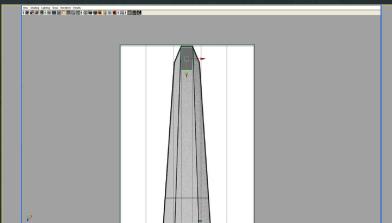
Fig 07





3dcreative





nsert Edge Loop Tool.	Reset Tool Tool Help
Description	
To create a new path	of edges across a mesh, click an edge and drag.
Settings	
Maintain position	: C Relative distance from edge
	C Equal distance from edge
	 Multiple edge loops
	✓ Use Equal Multiplier
Number of edge loops	: 1
	✓ Auto complete
	▼ Fix Quads
Smoothing angle	30.0000

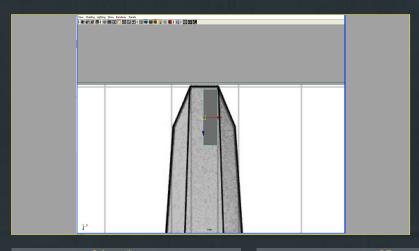


Fig 08b

> Orthographic > New > Front. Rename them "back" and "bottom" respectively.

Back and bottom are at the opposite of top and front, so the respective views must be rotated by 180 degrees in the Transform attributes: the bottom view will have to be rotated on the Z axis by 180 degrees, and the back view on the Y axis. For the same reason the positioning of the image planes will have an opposite value (the values that are negative in the top and the front values will have to be set to positive). These are the values I've set (**Fig.07**).

Fig 09

Fig 10

Now we can't keep all these views active, as they cover each other. So select the first three views by control clicking them on the outliner, and opening the Layer Editor (Window > Display Layer Editor). Click on the last icon on the right to create a new layer and assign the selected objects to it.

Do the same with the other two views, and now you'll have two different layers. By clicking on the V in the checkbox you can hide/unhide the views assigned to the layer (**Fig.08 – 8b**).

NOTE: To switch between the different views you can choose, for example, Panels > Orthographic > Side. Or you can select the camera from the outliner and from Panel choose Look Through Selected. For the main views you can, of course, use the central tab of the hotbox.

START MODELING

Fig 11

The model is composed of a series of different parts, and each one of them will have to be moved in a different layer. The parts are the following: upper and lower hull, engine, wings and interior. You can hide/unhide your geometries by switching the layers or choosing the hide/unhide options that you find under the display menu.

The first part we'll create is the hull. Go to the top view and draw a rectangle at the top of the upper hull, as seen in (**Fig.09**).



Chapter 2 - Modeling the Low-Poly Version | Spaceship CREATING THE CELERITAS

Next go to Edit Mesh, hover over the Insert Edge Loop tool and instead of clicking on it click on the little square near the voice. This will open a dialogue box on the right that allows you to change the options of this editor. Put the flag on Multiple Edge Loops and set the value to 1 (**Fig.10**).

Now click on the rectangle. Draw a loop exactly in the middle of the square. Then right click on the square and a series of tabs will open. Go to Face, select the face on the left and delete it (**Fig.11**).

Right click on the left face, select Object Mode and then go to Edit > Duplicate Special and click on the square icon on the right. In the dialogue box change the first Scale value (the X one) to -1 and then click Apply (**Fig.12**).

This way you create a specular instance of your face, with the pivot centered in the exact middle of the object, and all the changes you'll make on one half will affect the other.

Now select the edge (right click on the face and go to Edge) on the bottom and select Edit Mesh > Extrude and extrude along the Y axis (Fig.13).

Move the lower points, then select the edges on the right and extrude again. Then move the edges until you obtain a shape like **Fig.14**.

To check the correspondence between the shape you're creating and the blueprint, click on Shading > X-Ray. This way the geometry becomes transparent.

Now select the three verticals on the right, go to the side view and move them down. Move the other verticals up until you create a shape like the one shown in **Fig.15**.

Fig 12

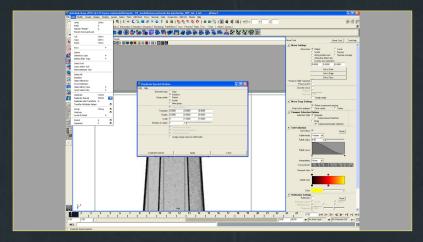


Fig 13

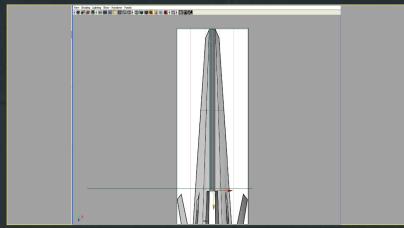
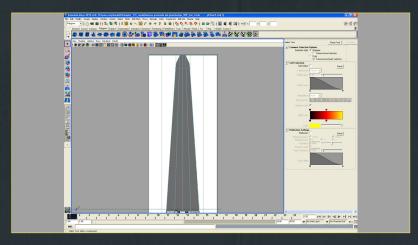
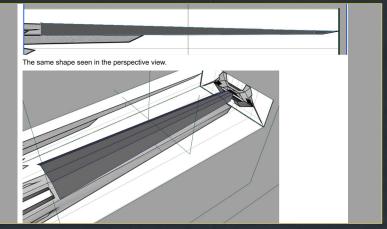
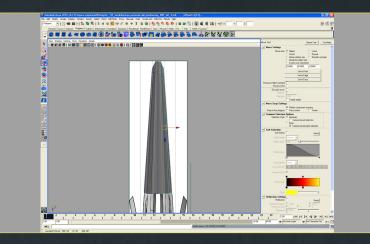


Fig 14





3dcreative



Now go back to the top view. Select Edit Mesh

> Insert Edge Loop > Square Icon and in the
dialogue box flag Relative Distance from Edge.

This way you can add your loops freehand, so
click-drag on one of the edges you want to split
and draw a loop as seen in Fig.16. Notice that
all the loops you'll add and edges you'll extrude
will have to follow the construction lines.

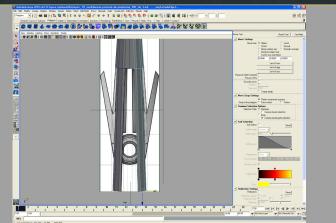


Fig 17 Next extrude the bottom edges (**Fig.17**).

Fig 16

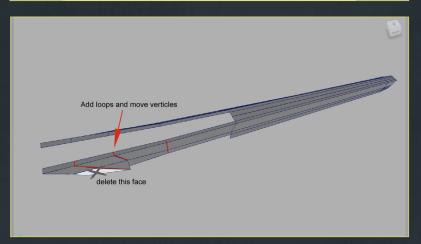
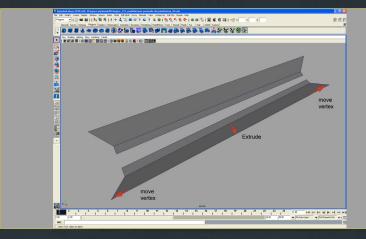


Fig 18 Add three more loops and check the side view to adapt the shape properly (Fig.18).



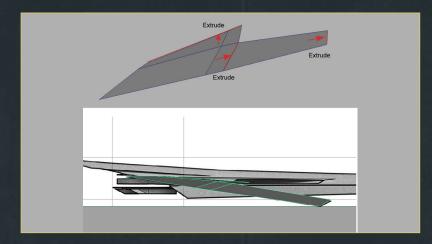
Now with the same technique used for the upper hull, create the lower hull with a base shape like (Fig.19).



Chapter 2 - Modeling the Low-Poly Version | Spaceship CREATING THE CELERITAS

Then do the wings (Fig.20).

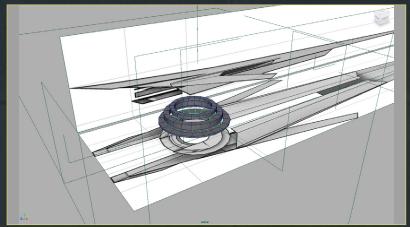
Fig 20



ENGINE

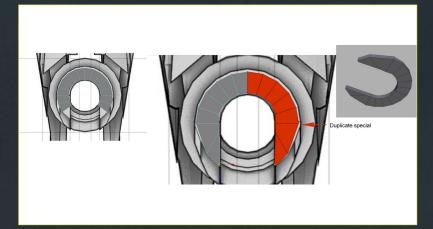
Draw four pipes with 20 sides and align them as shown in Fig.21, following the base in the blueprints. Then select the lower shape and select the lower six faces from the top view, delete them and then go to Mesh > Fill Hole to close the geometry. Select one half of the shape you've created, delete it and Duplicate Special the other one.

Fig 21



Next select the lower verticals, always from the top view, and move them in order to obtain the shape shown in **Fig.22**.

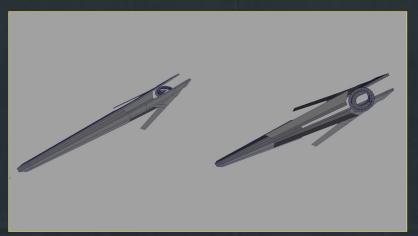
Fig 22



Our final model should now look like this (Fig.23).

FIRST FINE TUNING

If you take a look at the concept (this will be our guideline for all fixes) you'll notice that need to do a series of adjustments to make it look the same. The first set of adjustments will be the hull and the creation of the interior's base



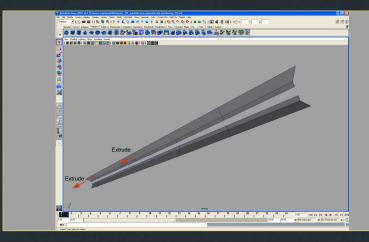


Fig 24 THE LOWER HULL

The lower hull must be modified a bit more. Extrude the front edges twice and add an edge loop as shown in **Fig.24**.

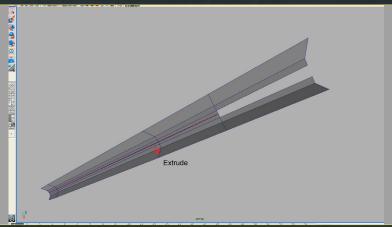


Fig 25 Extrude the interior edges you have created (Fig.25) and add some loops as indicated in Fig.26.

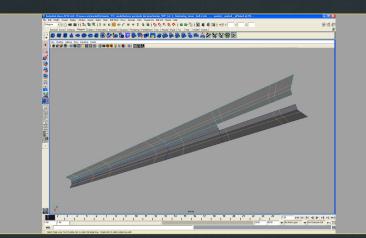
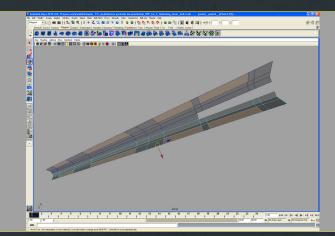


Fig 26

Fig 27



Select the faces shown in **Fig.27** and delete them.



Chapter 2 - Modeling the Low-Poly Version | Spaceship CREATING THE CELERITAS

One more edge loop, delete the faces and you're done (Fig.28).

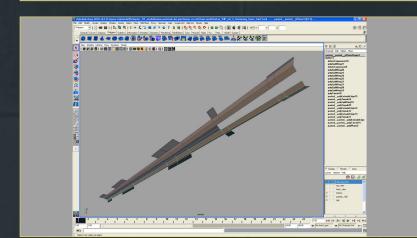
Fig 28

THE INTERIOR

The interior will be composed of two groups of elements: a main part that will be the fill that stands between the two hulls, and a series of smaller parts that will be the mechanical details between the two hulls. The main aim of the fill is to avoid blank parts between the hull and the mechanical parts.

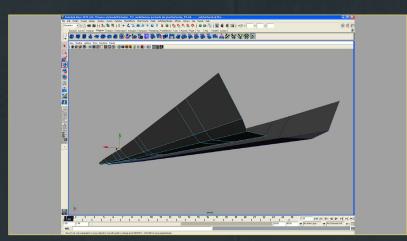
Starting from the lower hull we'll have to extract the base mesh. So select the faces as seen in Fig.29 and then select Edit Mesh > Duplicate Face.

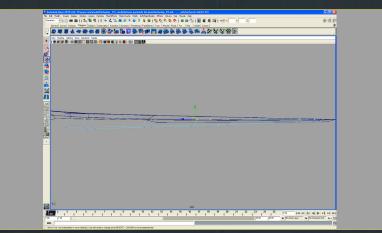
Fig 29



Next extrude the edges as shown in Fig.30 and align them to the upper hull (Fig.31).

Fig 30





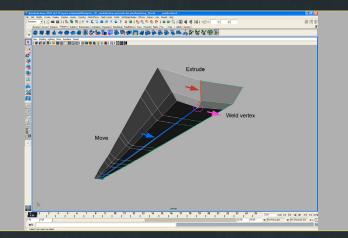


Fig 32

Once the base is done, close it by moving the bottom verticals and extruding the edges of the part facing the engine (Fig 32).

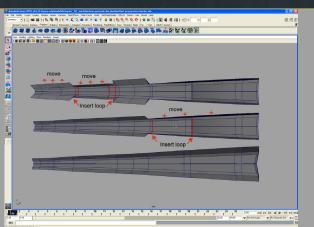


Fig 33 Now refine the geometry until you obtain a shape that fits the lower hull, leaving the space to add the interior detail (Fig.33 – 35).

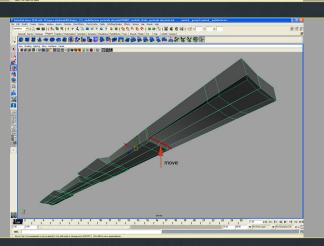
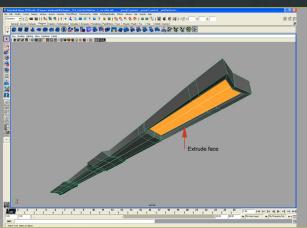


Fig 34



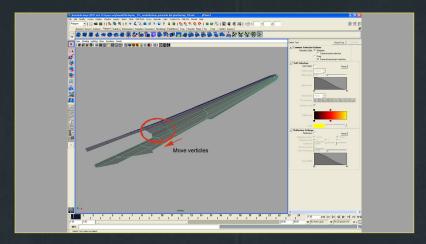


Chapter 2 - Modeling the Low-Poly Version | Spaceship CREATING THE CELERITAS

THE UPPER HULL

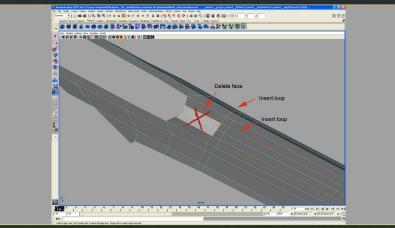
We'll start the upper hull by adjusting the part on the back and moving the verticals in order to obtain a shape more similar to the one in the concept (**Fig.36**).

Fig 36



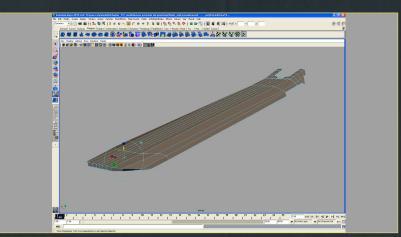
Next insert three loops as seen in Fig.37 and delete the face you've created in order to leave the space for the upper air intake.

Fig 37

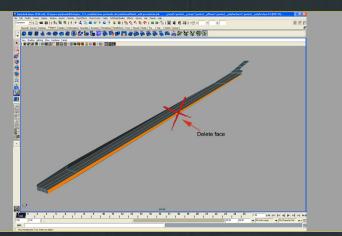


Select all of the hull's faces, extrude them and align the extrusion's X axis in order to give the hull its thickness (Fig.38). Starting from now remember that you're working with a volume and not a simple surface, so be careful when you select your verticals and edges, because you may also select those on the other side!

Fig 38



One important thing about extrusions: each time you extrude two instanced objects, remember to clear the facing faces (**Fig.39**)!



3dcreative

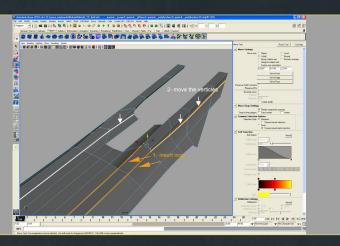


Fig 40

Once the extrusion is done it is time to refine the deck's part by adding two loops and moving the verticals as shown in Fig.40.

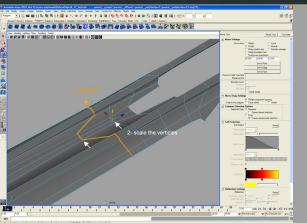


Fig 41 Scale the three verticals in front of the air intake and add one loop in front of them to draw the deck's shape (**Fig.41**).

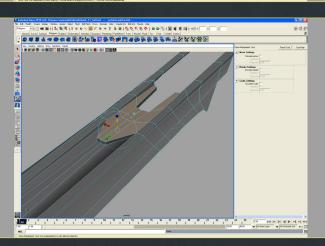
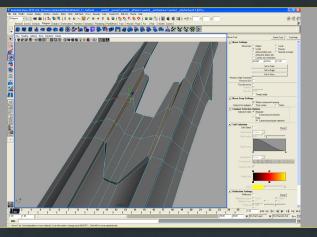


Fig 42 Next select and extrude the faces (**Fig.42**).



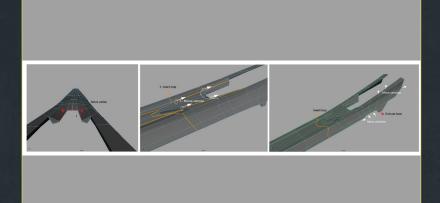
Delete the faces as shown in **Fig.43** and weld the edges by using Edit Mesh > Merge Edge tool.



Chapter 2 - Modeling the Low-Poly Version | Spaceship CREATING THE CELERITAS

Once the deck is extruded we'll have to make some more adjustments to match the concept's design (Fig.44).

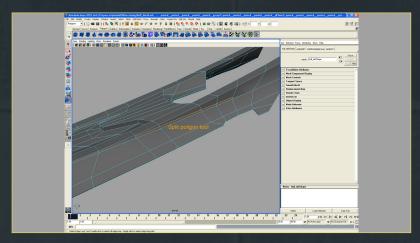
Fig 44



THE SIDE SHIELDS

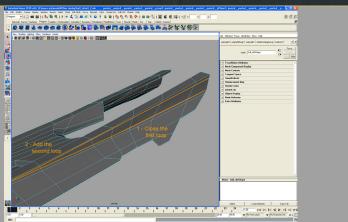
First draw a line parallel to the horizontal line of the hull (**Fig.45**).

Fig 45

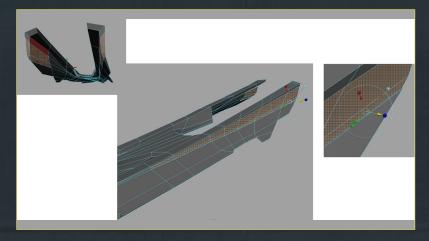


Then close the loop and add one more loop on the top (**Fig.46**).

Fig 46



Now select the faces as shown in **Fig.47** and extrude them inwards along the Z axis (the blue handle): the extrusion must be very light, remember we're on a big scale starship and this is a construction detail.



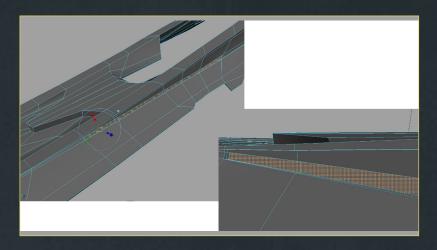


Fig 48

The last thing to do is to extrude the faces inwards as in Fig.48 and we're done with the upper hull.

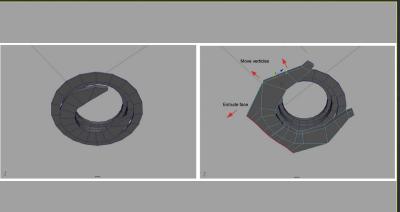


Fig 49 THE ENGINE

First of all we'll need to refine the engine's base, extruding the base part and moving the verticals as shown in **Fig.49**. This will be the main base of the engine.

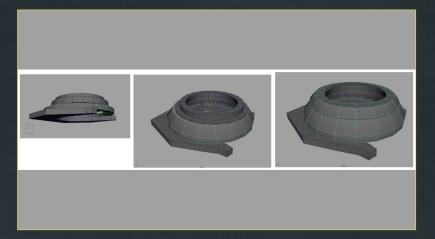
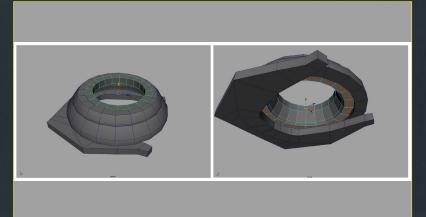


Fig 50

Next select the pipe above the engine and extrude and scale it three times. The aim is to cover the original shape made of three different pieces with just one (Fig.50).



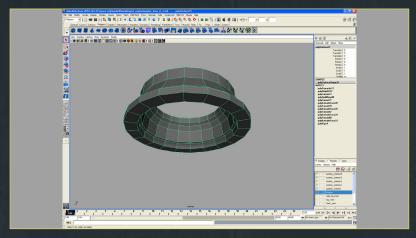
Do the same with the upper one, extruding it downwards with the same intention as the interior. Follow the volume traced by the pipes (Fig.51).



Chapter 2 - Modeling the Low-Poly Version | Spaceship CREATING THE CELERITAS

If you want to add some more detail you can insert more edge loops, and move them symmetrically using the Scale tool (Fig.52).

Fig 52



Next extrude the front part of the engine in order to create a bridge between the interior part and the engine (**Fig.53 – 55**).

Fig 53

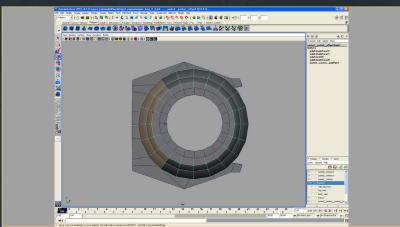
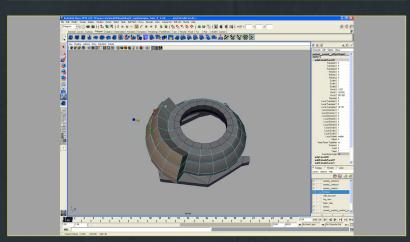
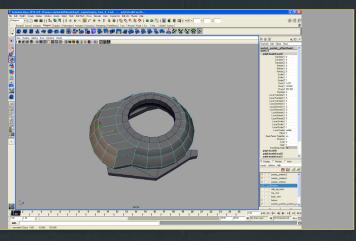


Fig 54







3dcreative

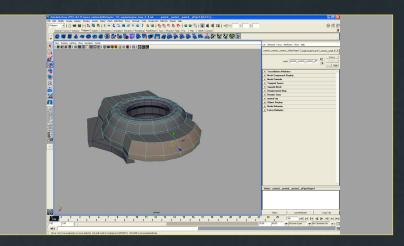


Fig 56 Extrude the back part of the outer shell (**Fig.56**).

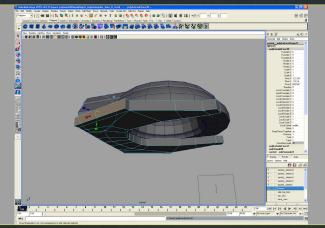
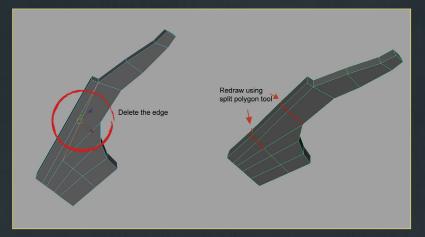
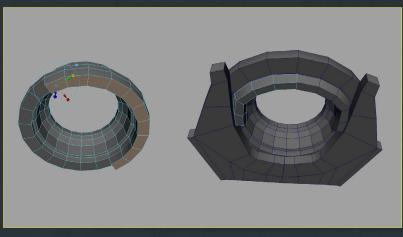


Fig 57 Also extrude the engine's side (this time using the face normal will be easier) (Fig.57).



It will be necessary to clean up the engine's mesh by deleting the edge indicated and reconstructing the mesh using the split polygon tool (Edit Mesh > Split Polygon tool) (Fig.58).

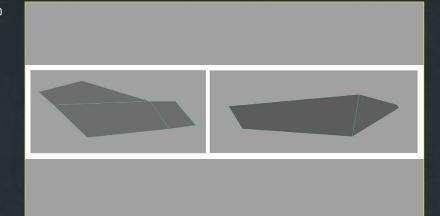


Next select the faces of the inner shield, duplicate them with Duplicate Face and extrude them. Then move the verticals to fit the engine base (Fig.59).

Chapter 2 - Modeling the Low-Poly Version | Spaceship CREATING THE CELERITAS

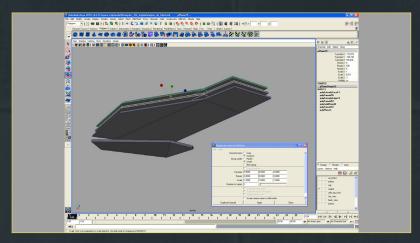
To create the engine's reactors draw two pieces of geometry like those shown (Fig.60).

Fig 60



Extrude them and Duplicate Special the three blades as shown in Fig.61. Use a translate value on the Y axis, set the copies to 2 and the scale value to 1.

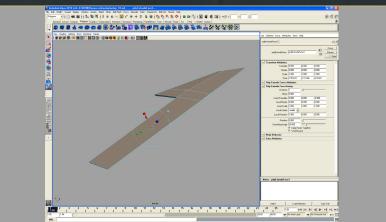
Fig 61

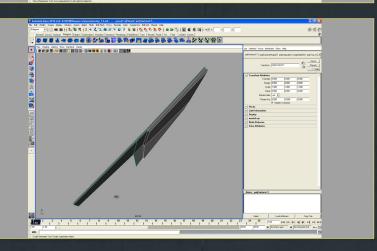


THE WINGS

For the wings you just have to extrude the base shape (Fig.62), and then select the faces that face the ship's interior, duplicate them and extrude them again. You'll obtain a result as in Fig.63.

Fig 62





3dcreative

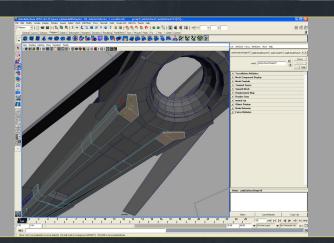
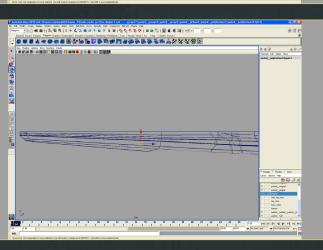


Fig 64 FINAL RETOUCH

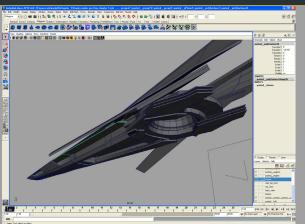
There is some fine tuning to do to the lower hull. First you'll have to extrude all the surfaces as you did for the upper one (Fig.38 – 39): select all the faces, extrude them along the X axis and delete the faces facing each other. Next extrude the face near the engine as shown in Fig.64.

The state of the s

Finally make a couple of adjustments to make it better fit the upper and lower hull (**Fig.65**).



The last thing we have to create is two bridges:
one that closes the upper hull and a second
that passes along the interior. To do the first
one, draw a shape as shown in Fig.66: notice
that you must be careful to follow the hull's
construction line. Extrude it. Duplicate it and
move it downwards to create the second bridge.



Finally adjust it as shown in Fig.67.



Chapter 2 - Modeling the Low-Poly Version | Spaceship CREATING THE CELERITAS

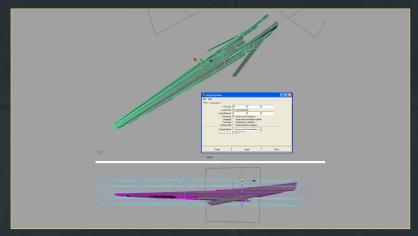
One last tip: while looking at your model perhaps you'll notice that there's still a gap between the concept and your model. This is why the base blueprint represented a shape slightly different from the concept. The first thing to do is to move the wings backwards, as shown in Fig.68. Now you can fix all the ship's shapes by selecting all the geometries (except the engine) and applying a lattice deformer (Create Deformers > Lattice) with five divisions on each axis. This will give you more control on the deformation.

Start deforming your cage by moving the control points (Fig.69 - 72).

Fig 68 | General Cutters | Indiana | Printers | Studen | Contented | Cont

Fig 69

Fig 70



For more from this artist contact them at:

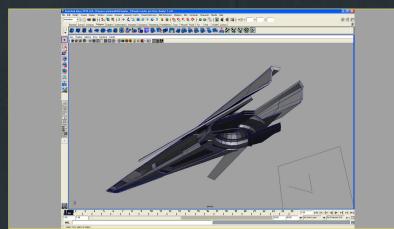
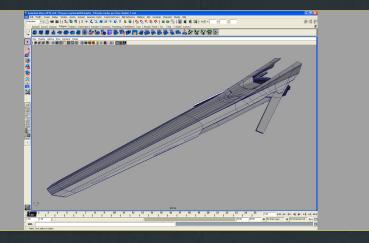
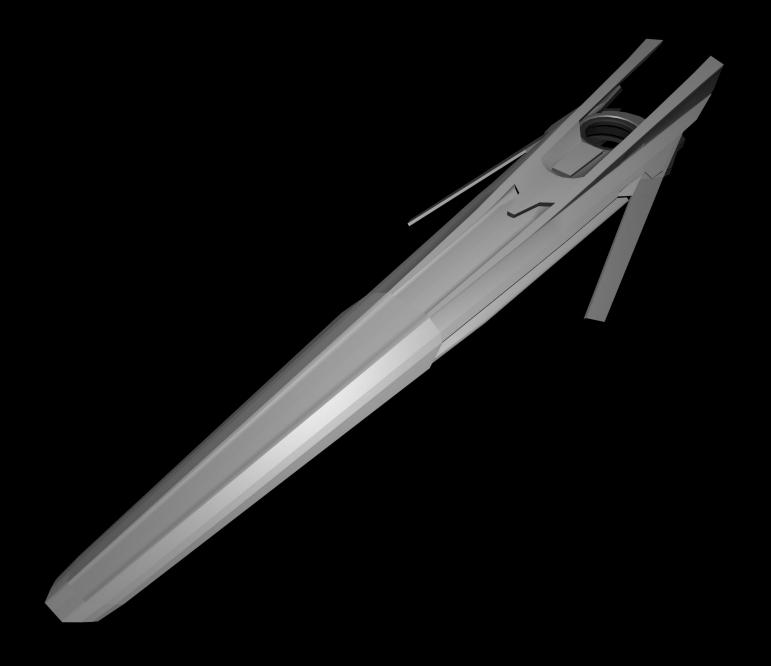


Fig 71



gigiterzi@tiscalinet.it



CREATING THE

CELERITAS

SPACESHIP MODELING & TEXTURING





CHAPTER 2 | THIS ISSUE

Modeling the Low-Poly Version

Modeling the High-Poly Version

CHAPTER 4 | FEBRUARY ISSUE 066

Mapping and Unwrapping

Texturing

CHAPTER 2 - MODELING THE LOW-POLY VERSION

In this fascinating tutorial series our artists will be guiding us through the creation of a complete spaceship in a scene, from beginning to end. We begin the series in Photoshop, using some of its excellent features to help create a concept, a vital process for anyone hoping to come up with an original design. That design is then passed on to our team of modelers who cover the stages of low and high poly modeling, texturing and post-production. This series is filled with tips to help during all of the stages leading up to the creation of an amazing sci-fi scene with an original spaceship.

Creating The Celeritas Chapter 2 - Modeling The Low-Poly Version

Software used: Cinema 4D

Preparing

Ok, let's begin. Open Cinema 4D and go into the menu to choose Modeling (Fig.01).

For this spaceship we will be using the concept that was designed in Chapter 1. This can be loaded directly into Cinema 4D so click on the viewport's Edit menu and choose Configure. In this tab there will be a few options; choose the one called Back. This is where you will find the image loader.

By pressing F1, F2, F3, F4 and F5 you can select different views (**Fig.02**):

- F2: Top
- F3: Right
- F4: Front
- F5: Multi-windows mode

Cinema 4D is, in general, very easy to use. Most of the functions have good, understandable icons. When you are in modeling mode, the user interface displays most of the tools that you will want to use. As you can see here (Fig.03), the viewport is large and the material manager and the timeline are hidden. This is a very good window setup to have when you are at this initial phase. As you can see the Move, Scale and Rotation buttons are located in the left corner of the interface. These are very important, and by using them you can do any transformation. The fastest way to do this is using the shortcuts:

- Move: E
- Scale: T
- Rotation: R

THE CREATION

To begin with, create a simple cube. This first form is a mesh which has many parameters. In the Attributes window (**Fig.04**) you can see the specifications of the cube. Every primitive has

Fig 01

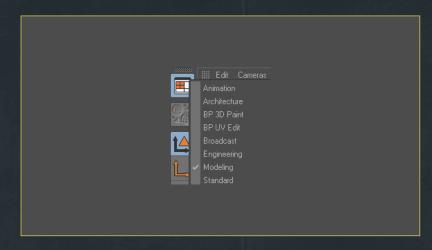


Fig 02

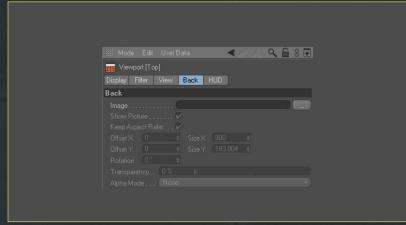
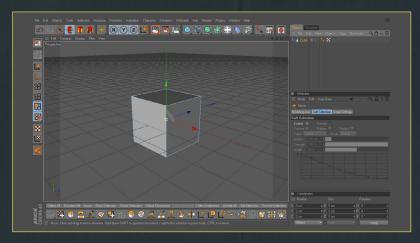


Fig 03



■ Attributes
Mode Edit User Data ✓
Cube Object [Cube.1] Basic Coord. Object Phong
Object Properties
• Size . X 200 cm \$ • Segments X 1 \$ • Size . Y 200 cm \$ • Segments Y 1 \$ • Size . Z 200 cm \$ • Segments Z 1 \$
Separate Surfaces Fillet Fillet Radius



Chapter 2 - Modeling the Low-Poly Version | Spaceship CREATING THE CELERITAS

a standard subdiv count that we can number randomly. If you want perfectly distanced subdivision or a non-breaking circular lines then use these parameters.

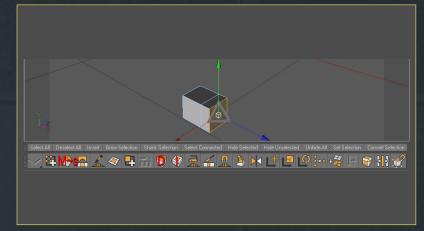
After you have done this you can transform it into an Editable mesh by simply pressing C. The editable form can be edited in three ways: point, edge and face when in polygon mode. Using these you can transform your mesh (Fig.05).

Switch to Face mode and select a polygon. Make an extrusion, press D and move your mouse. If you want a parametrical extrusion, go to the Attributes menu and then to Offset Count, and press Apply. This is the same with Inner Extrudes (I), Bevel (M~S) etc (Fig.06).

Fig 05



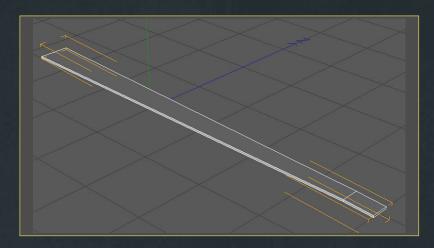
Fig 06

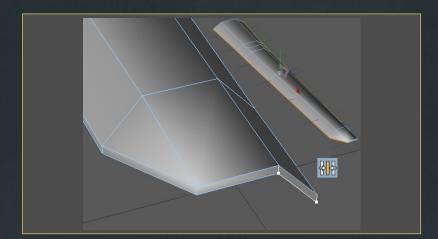


LET'S SEE WHAT WE WANT

It makes sense to split the spaceship into three main parts: the nose, the middle (ship umbilical), and the rear. In general the nose and the rear always contain the same kind of things: the bridge, sensors, boosters, engines etc. (Although sometimes the bridge is placed in a different areas). In the middle part you can almost build whatever you can imagine, but always remember to make it as believable as possible. So here is the concept (Fig.07).







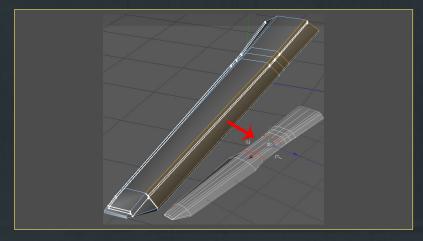


Fig 08

DRAWING THE MAIN SURFACE SHAPES

There are two simple ways that we can do this: by extruding the poly or by using poly draw. I'm going to use the first method. Create a cube and reduce its size on the Y scale to make it narrower. Convert it to an editable form and start to extrude the faces. The rear of the ship is wider than the nose so select it and make it wider while pressing Z (Fig.08).

Fig 09

The middle part of the ship is moving up in steep line. Use the Knife tool in Loop mode and cut a loop. After you have done this select the loop. Use the Bevel tool. In the Attributes menu set the type to Convex, and the Subdivision count to 2. Move your mouse and you can see the steeper shape. If you want a steeper form, just increase the count of the subdivs (**Fig.09**).

Fig 10

Select the side of the cube and extrude it along dimension Z. Move these faces down until you get a shape similar to that of a house roof.

The nose of ship is in the shape of a triangle.

To create this use the Stitch tool. Click on the edge of the top poly and move it to the bottom of the lower poly. If you want to switch any kind of edge or face, this tool is best one to use (Fig.10).

Fig 11

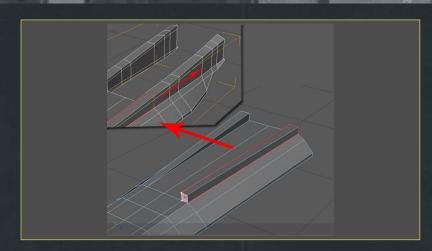
Select the faces on the side. Use the Knife tool in Loop mode again to move the mesh around, as you can see in **Fig.11**. Don't worry though because the tool only works on the selected zone. In the middle part of the ship you need to create a loop to make the narrower part of the main body of the ship. Once you have done this you can start to create the rear of the ship.



Chapter 2 - Modeling the Low-Poly Version | Spaceship CREATING THE CELERITAS

Select the last face at the tail of the body of the ship and extrude it. Select the top edge end move it down. After you have done this select the back of the mesh and extrude it further. By following these steps you will create the "top wings" of the ship. You may notice that the end of the wing is bending a little to the center. Select the inner points and move them higher and then you will have the main shape of the ship (**Fig.12**).

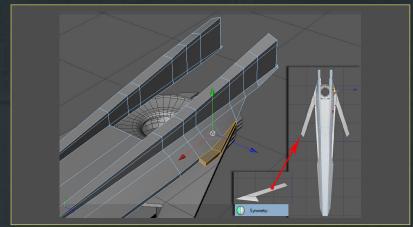
Fig 12



The next step is the wings. This is a very simple shape as it is just a cube that has been modified using the same steps as mentioned before. Select two of the faces of the wing and extrude them out. Once you have done this select the last edge and switch it down as we have done before. Use Symmetry to create the wing on the other side. When we are making transformations and building details on the ship, symmetry will always be in use (**Fig.13**).

Fig 13

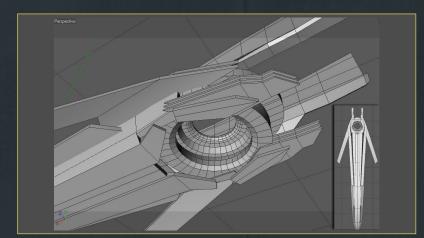
Fig 14



The ship has many other different parts, for example the ring at the bottom and the back plates. These are simple shapes that can also be created using the techniques I have explained. In the next chapter, we will study how we can detail these features (Fig.14).

Thank you for reading my tutorial!

Best wishes, Tamas



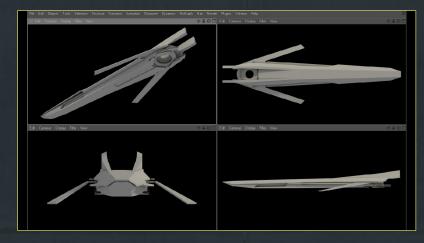
TAMÁS GYERMÁN

For more from this artist visit:

http://www.wmelone.com/cinemorx/index.html

Or contact:

tamas.gyerman@gmail.com



3DTotal presents the new issue of 2DARTIST magazine: a downloadable monthly magazine for concept art, digital & matte painting for only £2.75 (approx \$3.78 - €2.93)



visit WWW.2DARTISTMAG.COM to download the free flite' issue, the full issue, subscription offers and to purchase back issues





Is a resource website for the CG community; amongst our growing number of products for CG artists, we produce two monthly downloadable PDF magazines – 2DArtist and 3DCreative.

We are based in the West Midlands, in the UK, and our intention with our magazines is to make each issue as full of great articles, images, interviews and tutorials as possible. If you would like more information on 3DTotal or our magazines, or if you have a question for one our team, please use the links below.



http://www.3dtotal.com http://www.3dcreativemag.com http://www.2dartistmag.com

Editor & Content Manager > Simon Morse simon@3dtotal.com Lead Designer > Chris Perrins chrisp@3dtotal.com Marketing > Claire Hughes claire@3dtotal.com

PARTNERS

If you have a CG community website and would like to support 3DCreative and/or 2DArtist magazine by showing our banners, please contact Lynette Clee at the email address above









































